# Exploring of Utility Factors that Affect Intention to Use, Satisfaction and Loyalty in B2C/P2P Car-Sharing Economy

**By**

**LEE, Sunme**

**THESIS**

Submitted to
KDI School of Public Policy and Management
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**ABSTRACT**

# Exploring of Utility Factors that Affect Intention to Use, Satisfaction and Loyalty in B2C/P2P Car-Sharing Economy

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The Sharing economy has been disseminating and disrupting traditional industries across the world. Although the sharing economy is still fledgling, relatively little comprehensive research has been carried out on the sharing economy. Applying an extended utility model modified from the previous studies, this research investigates the relationships of the types of utilities affecting satisfaction and loyalty as well as a willingness to use the service in the two studies. Study 1 examines the effects of the level of utility related to the levels of satisfaction and loyalty to existing users and intentions to use and expected satisfaction to potential users of B2C car-sharing service and study 2 analyzes the effects of their intension and levels of expected satisfaction to potential users to the P2P car-sharing service. Factor Analysis, regression analysis, ANOVA are applied to examine relationships. The results revealed that the effect of perceived utilities differs between user satisfaction and overall potential users for car-sharing economy; and the effect of perceived utilities differs between B2C and P2P car-sharing economy and some common factors affect both users/non-users and B2C/P2P car-sharing economy. Finally, the findings of this study provided managerial and policy implications not only for sharing economy service startups but also for traditional industry companies and theoretical implications to academia.

Key word: Utility, Intention, Satisfaction, Loyalty, Sharing Economy, Car-sharing, Factor Analysis.

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## I. Introduction

Sharing economy is ground swelling across industries worldwide. It constitutes a disruptive element of competition for traditional industry and it has a powerful drive in people's lives. Even though it still is incipient a large number of companies—from startups to large enterprises—are beginning to override the new wave of economy, transforming their value propositions in order to fulfill consumer's needs and lifestyle (Botsmon & Rogers, 2010).

The term 'sharing economy' is first coined by Lessig (2008), and it has emerged as a new paradigm of the economy after economic collapse in 2008 (Rifkin, 2015) and the digital revolution, such as the mesh technology development (Ganzky 2010) and the appearance of social media that enables consumer to build trust among people who don't know each other (Galbreth, Ghosh, & Shor, 2012; Rhue & Sundararajan, 2014). So far, despite growing attention towards sharing economy, there is no consensus on a clear definition of what it is. The research on sharing economy is still in its early stages, even though much of scholarly work has been on the topic from different perspectives: collaborative consumption (Botsman & Rogers, 2010); collaborative economy (Owyang 2014); and access-based consumption (Bardhi & Eckhardt, 2012). Generally, sharing economy is used as more broad a term, and collaborative economy and access-based economy are regarded as subsets with different main purposes.

The most prototypical cases of "commercial sharing systems"—defined as "marketer-managed systems that provide customers with the opportunity to enjoy product benefits without ownership" (Lamberton & Rose, 2012)—are *sharing mobility* (e.g. Zipcar, RelayRides and Uber) and *sharing accommodation* (e.g. Airbnb). In contrast to business to customer (B2C) sharing economy models, the main suppliers of peer-to-peer (P2P) models are customers themselves:

customers attain the profit generated from the operation, and the main source of the profit is the suppliers' own assets like RelayRides and Getaround. Starting from the case of Zipcar (B2C car-sharing service), a pioneered model as a creative way to use a car in a company's provision, sharing economy have developed to the peer-to-peer type transaction, allowing people to rent a car without owning the assets for provision, but provision of service by cars that people already own (P2P car-sharing service). Moreover, not only startups, but also traditional automakers (e.g. Daimer and BMW) take part in car-sharing service, to survive new business trends and to implement Creating Shared Value (CSV) such as environmentally-friendly brand and reduce natural resource consumption.

First and the foremost, one of the significant values in studying sharing economy in Asia is that Asians have the highest intention to participate in the sharing economy. According to a Nielsen survey (2014), 78% of people in Asia-Pacific responded that they are "willing to share their own asset" whereas only 68% answered at the global level. Likewise, 86% of Asia-Pacific answered that they are "willing to share from others" compared to the global average of 66%. Given these data, it appears that Asia has a high growth potential in the sharing economy. In particular, Korea ranked the fourth highest in smartphone penetration rate (eighty-three percent) in the global market (Digieco, 2015); and Koreans are conscious to new trends (Na & Jeong, 2012). Moreover, Lee& Jung (2014) mentioned that Korean's social media use and motivation are significantly correlated with the bridging/bonding social capital and social, political participation, according to the national survey result analysis. Therefore, in the light of its market conditions, Korea can be a pertinent sample for studies on sharing economy in Asia.

The field of research on sharing economy is relatively young, and as such it is still establishing its basic tenets. In particular, studies on customer's satisfaction and intention to take

part in this business services are nascent, and little research has been carryout on it, both organically and quantitatively. Based on this consideration, the purpose of the study is to investigate the factors that affect intention of using the service, satisfaction, and loyalty regarding the sharing economy car business. By applying utility and satisfaction theories, this study attempts to answer the following research questions:

RQ1) How do perception on car-sharing economy utilities—including transaction, mobility, storage, anti-industry, social, moral, sustainability, technology, emotional, economic, and trust—affect intention to use the service to potential users and satisfaction to existing users?

RQ3) How does intention to use affect expected satisfaction in terms of car sharing economy?

RQ4) How does satisfaction affect loyalty in terms of car sharing economy?

With regards to potential users of B2C and P2P car sharing services, this study examines the relationship between the effects of intention to use and expected satisfaction; for existing customers, it examines the effects of satisfaction and loyalty.

Following this chapter, Chapter II covers overall review of sharing economy; Chapter III will explain the state-of-art of car-sharing economy; in Chapter IV, the theoretical background of sharing economy and its business model will be discussed; Chapter V will introduce hypothesis which this research will attempt to answer; and following Chapter IV methodology part, the data analysis of The last chapter will discuss about the conclusion and it will give an insight for managers, policy makers and scholars.

## II. The Review on Sharing Economy

Depending on different focal points of sharing economy, consumer research bears witness to a recent spurt of attention to sharing economy; sharing economy is articulated in different terms: 1) "collaborative consumption" (Botsman & Rogers, 2010), "collaborative economy" (Owyang, Grenville, & Samuel, 2014), and "access-based consumption" (Bardhi & Eckhardt, 2012) focusing on motivation of consumption; –2) "on-demand economy" (Gurvich, Lariviere, & Moreno-Garcia, 2015) and "commercial sharing systems" (Lamberton & Rose, 2012) focusing on motivation of business; –3) "hybrid economy" (Scaraboto, 2015), "co-proudciton" (Humphreys & Grayson, 2008), "prosumption" (Ritzer & Jurgenson, 2010, Toffler, 1989) focusing on consumer bahaviour.

### 2.1 Definition of Sharing Economy

"Sharing Economy", first coined by Lessig (2008), is managed by a set of social relations, while commercial economy is ruled by price mechanism. It is built upon spontaneous reciprocal relationships between producers and consumers, relying on users' contribution without economic rewards, because contributors' main motivation is to participate (Lessig, 2008). According to Belk (2007), sharing has been critical not just in the recent consumption but also in earlier times: it has transcended the oldest type of humankinds' consumption like family. Belk also expounds sharing as "the act and process of distributing what is ours to others for their use and/or the act and process of receiving or taking something from others for our use" (Belk, 2007). Collaborative Lab defined sharing economy as an "economic model based on sharing underutilized assets from spaces to skills to stuff for non-monetary or non-monetary benefits, largely focused on peer-to-peer (P2P) marketplaces" (Botsman, 2013).

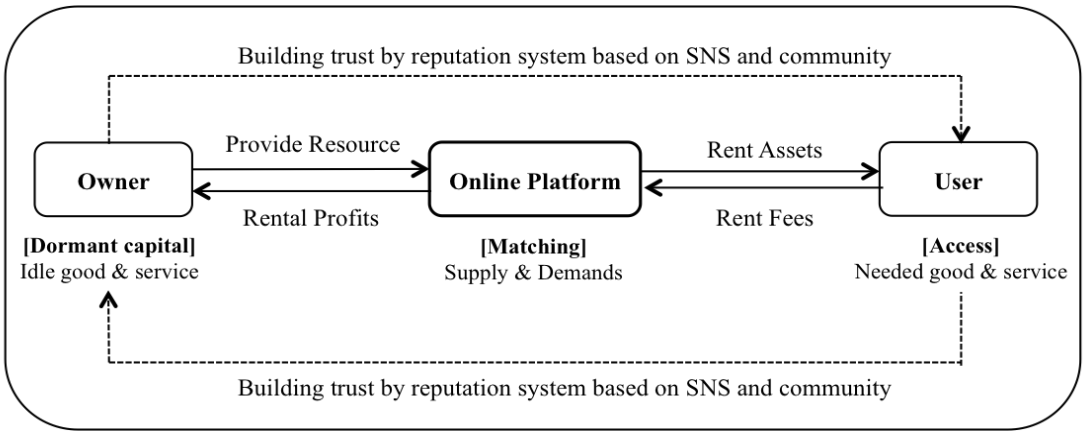



**Figure 1. Sharing Economy Model**

As mentioned earlier, peer-to-peer (P2P) type transaction is considered as a disruptive but ultimate business model of sharing economy. Sundararajan (2013) delineates the sharing economy as a peer economy in which the marketplace is constituted by sharing and exchange products and services potentially owned by consumers through an online platform where reputation check and active supplier screening for quality control are implemented among peers [please check it this makes sense to you]. The European Commission defined sharing economy more concretely as "accessibility based business models for peer-to-peer markets and its user communities" (Dervojeda et al., 2013). At last, with the concept of "prosumer" (Toffler, 1989), the boundary between producers and consumers gets blurred—an individual not only consumes the products but also participates in the production process. It is much more widely accepted in a digital realm where users create their own contents or even remix existing contents, sharing through platform (Toffler & Toffler, 2006).

Fraiberger and Sundararajan (2015) address that sharing has attracted scholars' considerable attention since the digital age, and a new dynamic model of "peer-to-peer internet-enabled rental markets for durable" assumed an ultimate form of sharing economy business model because it imbues dormant physical assets with productivity, generates capital value, and even creates

innovation with diverse, new consumption experiences. Sundararajan (2014) asserts that peer-to-peer, collaborative sharing economy will be a significant driving engine of a country's economic development; "stimulating new consumption, raising productivity, and catalyzing individual innovation and entrepreneurship." Besides, Moatti (2015) advocate that a sharing economy business model is becoming professionalized not as a secondary source of income but as a primary job. Some savvy individuals have indemnified themselves as a "new middleman: power sharer, optimizing asset selection and utilization; and the power-operator: empowering freelancers with insightful tools; the power-organizer: organizing community and building trust" (Moatti, 2015). Trust is important because peer-to-peer economy maintains mutual reputation assessed by supplier and demanders maintaining quality by reputation systems and active supplier's quality, and insurance for when the crunch comes. Peer to peer economy is becoming a reality and the phenomenon is carrying on in micro-entrepreneurship as well. Sundararajan (2014) also actively supports peer economy which can nourish micro-entrepreneurs with the opportunity to run small businesses without taking all-or-nothing start-up based on their idle capital.

## 2.2 Sharing Economy from a Different Perspective

### 2.2.1 Sharing Economy as Collaborative Consumption

In the persecitve of consumption, the term "collaborative consumption" was originally coined by Felson and Spaeth (1978) as "those events in which one or more persons consume economic goods or services in the process of engaging in joint activities with one or more others," but it is too broad and insufficient as it does not characterize the specific process of acquisiton and distribution of resources. Thereafter, it was re-defiened and reclaimed by Botsman and Rogers (2010) as "an economic model on sharing, swapping, trading or renting products and services enabling acess over owneship, reinveinting not just what we consume but how we

consumme," which is collaborating not just for consumption but for increasing production. However, Belk (2014), arguing the concept that Botsman and Rogers was still borad, specified the term as "people coordiating the acquaitng and distribution of resource fee or other conpensation," which excludes sharing activies without monetary returns. By such definition, some businesses, including CouchSurfing and ZipCar, would be ruled out. To put it more concretely, collaborative consumption is a moderated form of sharing and marketplace exhange; in sum, collborative economy (Owyang, Grenville, & Samuel, 2014) is "a powerful movent in which people are getting goods and services from each other (sharing economy) or even making them outright (market movement)."

### 2.2.2 Sharing Economy as Access-based Consumption

Even though the terms 'sharing economy' and 'collaborative economy' focuse on community or collective action, the motivation behind collective action is a matter of discussion: Bardhi & Eckhardt challenge a set of postulates implicit in sharing economy and collaborative consumption's motivation (2012), arguing that motivation comes not from a sense of community but from convinence and cost-effective access to "valued resoucees", "felxibility", and "freedom from the financial, social, and emotional obiligations embedded in ownership and sharing" (Eckhardt & Bardhi, 2015). Botsman and Rogers (2010) also exhibit that the main motivation of people for sharing is not a feeling of community belongings, which is contrary to Belk's (2007) assertion that the main motivation of sharing is the inclination to a feeling of unity and an aggregate sense of self, and, Bardhi & Eckhardt argue that, once sharing behaviour expands to a market-mediated level, exchanging between strangers is no longer sharing at all. It is rather an "economic exhange" in which consumers are "utilitarian" seeking to attain lower costs, pursuing convinence rather than social value, and having no desire to interact among them. For example,

in the case of Zipcar introduced by the authors, consumers don't feel any reciprocal obilication when sharing with one another, since the transaction takes place anonymously. Zipsters (users of Zipcar) do not regard their activities as co-sharing but instead rely on the conpany's faciliation in the provision of equitable sharing system for everyone, not having enough trust to each other (2015). This behavior is defined as "access-based consumption"—"transactions that can be market mediated but where no transfer of ownership take place" (Bardhi & Eckhardt, 2012). Therefore, access-economy focuses on consumers' savvy puchase based on their competitive advantage—optimizing convinence and ablity within the same price range rather than collaborating based on trust among strangers . In terms of bonding with brands, access-based consumers are less likely to bind themselves with brands (Bardhi & Eckhardt, 2012), as Chen (2009) finds that possession is not always the ultimate expression of consumer desire.

## 2.3 The Development of Sharing Economy

### 2.3.1 Economic: Changes of Paradigm of Capitalism

With an advent of the economic crisis, reconsideration of capitalism and consumerism has emerged. Until the 2008 financial crisis, the capitalism instigated people to compete with others on how much they consume. With this competition, people were prone to expand their credit without hesitation, which was one of the main reasons for Great Recession. The rapid expansion of credit, particularly in mortgage and defaults, led to the crisis; even low-income households grew credit including mortgage or auto vehicle (Amromin & McGranahan, 2015). However, investors suffered from "this time is syndrome" (Reinhard & Rogoff, 2009), and they overlooked the risk and blinded themselve with greed (Gennaioli, Shleifer, & Vishny, 2015), eventually leading to the crisis.

The term “conspicuous consumption”, first coined by Thorstein Vebelen (1889), indicates spending money on or acquiring sumptuous items to display their wealth ostentatiously. Since the age of mass production started, the consumption has spiraled endlessly, referred to as “hyper-consumerism” or “a conumerism for the sake of consuming” (Lunning, 2013). Economist Richard Layard (2005) illustrate the relationship between growth, hyper-cosumerism, and happiness, and he revealed the consipicious cycle of “borrow and spend” and a revolution of rising expectation on material. However, happiness has become more ambigous, even with more consumerism.

Rifkin (2015) points out that this generation inherited the entropic bill from economic activities during the Industrial Age, In other words, economic acitivities are ruled by law of thermodynamics, which is “usable free energy tends to disperse or become lost in the form of bound energy” (Roegen, 1987). The marketing guru, Kotler (2015) also identified shortcomings of caplitalism: “exploits the environment and natural resources in the absence of regulation…. [capitalism] creates business cycles and economic instability…. [capitalism] emphasizes individualism and self-interest at the expense of community and the commons…. [captialsiam] encourages high consumer debt and leads to a growing financially driven rather than producer-driven economy.” Kotler(2015) also argues that to break through the limitaion of capitalism, the system should embrace social value and happiness in the market equation.

According to Rifkin (2014), the development of powerful new technology platform led to the Third Industrial Revolution and the shift to a new economic paradigm. As a result, corporate profits are beginning to desiccate, property rights are diluting, and economy based on scarcity is slowly giving way to an economy of abundance. As digitalization has been accelerated, collaborative consumption has gradually evolved.

### 2.3.2 Social: Shift to New Consumption Culture

As firms and consumers regard sharing as a suitable and profitable system which can be an alternative to ownership (Belk, 2007), sole ownership, the dominant means of obtatining product benefits, is chellenged. In the industrial period, possession was a symbol of social status; for example, owning which brand of car used to signal the owner's weath and socio-economic position. Belk's (1998) research explicates that possession has a significant contribution to expressing one's identity. Radka & Margolis (2011) also illustrate that belongings used to display pesonal success, status and security. However, in his recent research, Belk (2007) explains that the rapid pace of technology advancement affects an increasing shift toward shared ownership. In particular, the countries that are already in a matured stage in industrialization and are well-developed, are more likely to be content with access rather than ownership. In addition, Radka & Margolis (2011) explore that the emergence of new business model on the basis of swapping or trading rather than transferring possession allows people to share their possession and even make profits from such behaviour.

## 2.3.3. Technology: Digitalization

The rapid growth of the innovation in the realm of communication technology gives rise to a new wave of sharing economy through internet or smart phones: these means allows to access easily virtually anywhere and anytime. The Internet, especially web 2.0, has brought a great amount of user-created contents and has developed and shaped the ways of consuming contents online (Kaplan & Haenlein, 2010), like Wikipedia, internet-based open encyclopedia co-produced by the public with free-access by sharing their knowledge. Collaboration among online users, so called peer-to-peer or consumer-to-consumer, started out with Napster, file

sharing of music and motion pictures via digital platforms (Gisler, 2006, Hennig-Thurau, Henning, & Sattler, 2007). According to Rodrigues and Druschel (2010), collaboration is essential for a peer-to-peer platform which is "a system where the ceontent generation is higly distrubted and decentralized as a result of the organing gorwth and strong user self-organization."

Those movements led to an open-source system in which online uesrs work together by sharing knolwedge (Roberts, Hann, & Slaughter, 2006), and its main motivations are not only the individual reputation and enjoyment in helping others, but also social capitals in structure, cognitiveness and relations (McLure Wasko & Faraj, 2015). However, sharing online has crashed with intelletual property rights since the Napster case from 1999 to 2001, resulting in the "war on sharing" (Aigrain, 2012). In turn, the trends softlanded with legal download platforms like iTunes, steaming music services, such as Pandora and Spotify, and even more contents available via online, including e-books. Through such services, users became more familiar with peer-to-peer sharing. After the transient phonoemeon, the borderline between private and public, or between real world and virtual world that is cyberspace, got blurred.

Then, with the advent of social media service in 2004-2006, social media service became part of people's real life (Kaplan & Haenlein, 2010). Subsequently, the era of smatphone and mobile application stimulated sharing behaviour on-line, like sharing status updates, photos, and links. Sundararajan (2013) reveal that those acculmated histories and data of social media brings "real-world trust" and "social capital online", letting people easily check and review others' information. These two values demonstrate how deeply they influence the social networks because most of the data ranges from local friendship networks to broader social demography varied across relationships of different strength and kinds including close friends, families, family members, colleagues, topic experts and casual acquaintances (Sundararajan, 2012). It is

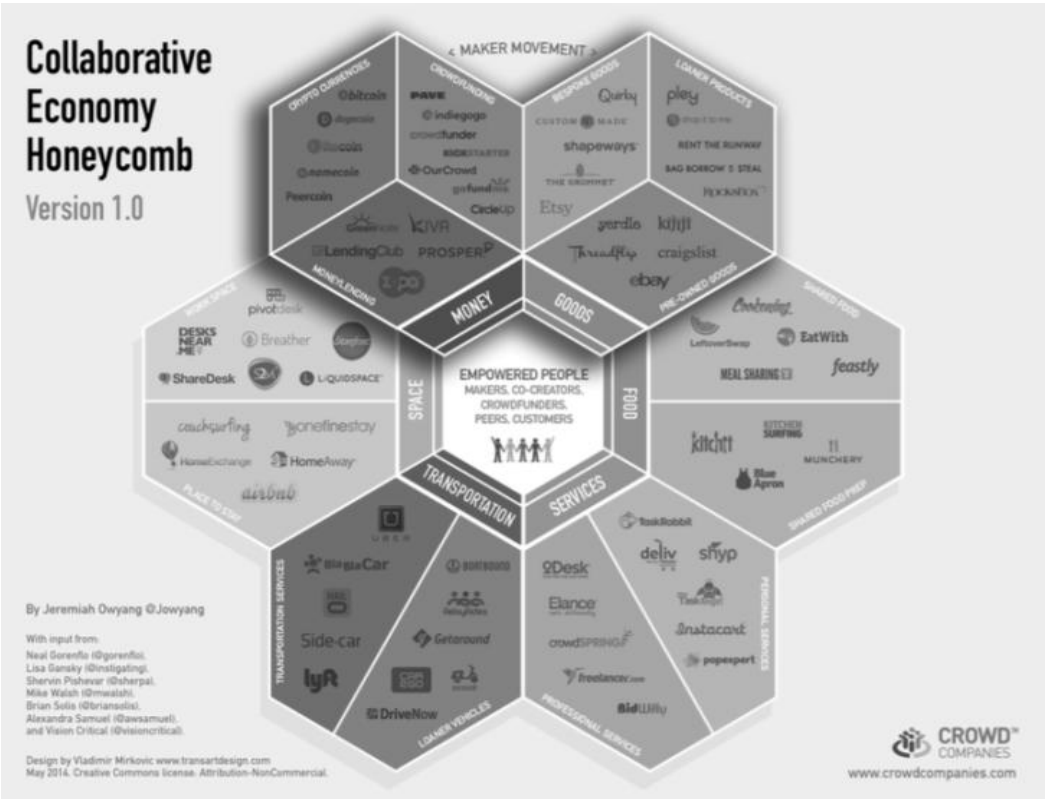
important to note that incremented reliance on information techonology and peer-to-peer platform led to the evolution of the social commerce, facilitating the sharing of goods and services via online platform (Hennig-Thurau, Henning, & Sattler, 2007), or a social media setting that "support social interactions and user contributions to assist activities in the buying and selling of products and services online and offline" (Wang & Zhang, 2012). Ghose, Ipeirotis, and Sundararajan (2005) support that "buyer-seller network contains critical reputation," and that the social media's reputation is particularly influential because it is based on various relationships which can induce "the right sentiment" and "the appropriate reaction" (Sundararajan, 2012). All those technology-driven courses of action enable information access, booking, and ticketing for ownership to be more compreshensive and even faster, gradually creating more extensive ways of connecting and possessing gooods and services online (Gansky, 2010).

## III. The State-of-Art of Sharing Economy

### 3.1 The Sharing Economy: Landscape

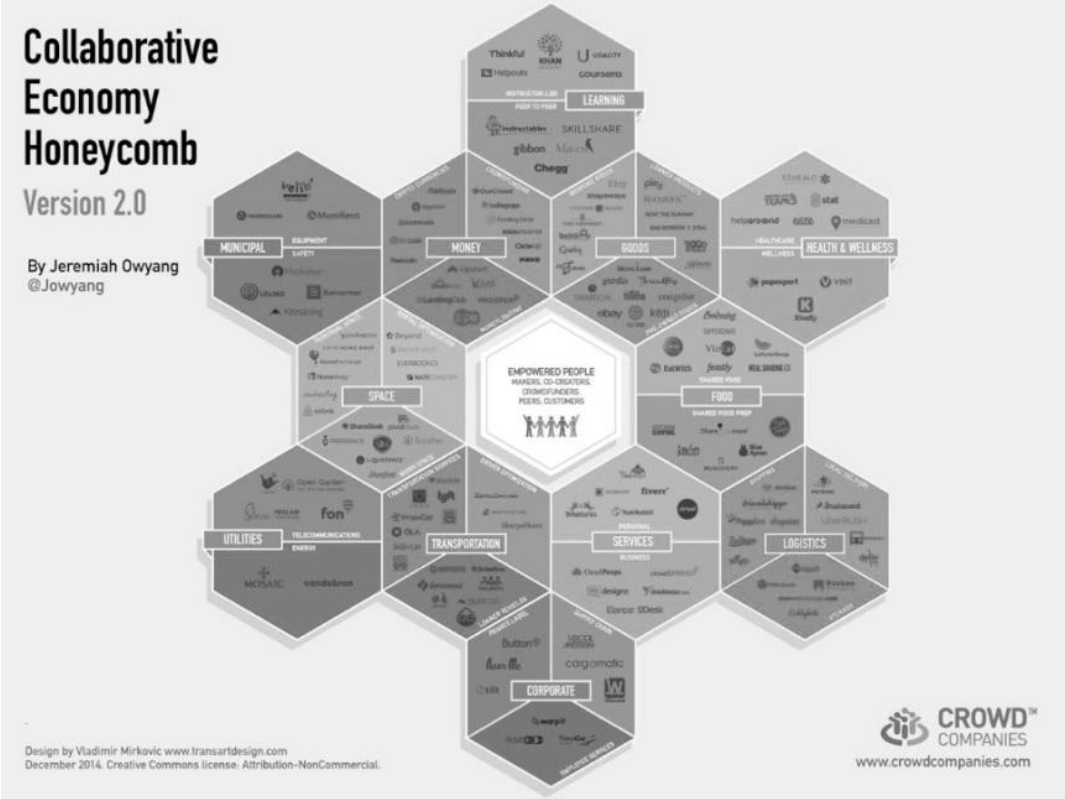
Recently, as the sharing business model has appealed immensely to entrepreneurs, a number of internet and mobile devices stimulated the emergence of peer-to-peer marketplaces "to facilitate the short-term rental of durable goods" (Fraiberger and Sundararajan, 2015). Rachel and Rogers (2010) categorized such marketplaces into three domains: product service system, redistribution market, and collaborative life style. Matzler, Veider, & Kathan (2014) classified six ways of companies' potential strategies to approach collaborative consumption: (1) selling rights to use of product rather than ownership; (2) supporting customers' desire to resell goods; (3) exploiting unused resources and capacities; (4) providing repair and maintenance services; (5) using collaborative

consumption to target new customers; and (6) developing entirely new business models enabled by collaborative consumption. With the only exception of the method (6), the authors interpret that not only particular startups but also traditional companies can promote goods and services in a similar way, by means of persuading consumers about the advantages of the value position in the realm of collaborative consumption. Owyang (2015) tries to present the overall collaborative economy landscape through a honeycomb illustration: version 1.0 includes goods, food, services, transportation, space, and money; and version 2.0 incorporates version 1.0 with learning, health & wellness, logistics, corporate, utilities, and municipal, including.




**Source: The Next Phase of Digital: The Collaborative Economy. (2015, June 9th AMA Webcast)**

**Figure 2. Collaborative Economy Comb1.0 (Oywang 2015)**




**Source: The Next Phase of Digital: The Collaborative Economy. (2015, June 9th AMA Webcast)**

**Figure 3. Collaborative Economy Comb2.0 (Oywang 2015)**

## 3.2. Car-Sharing Economy

### 3.2.1. Definition of Car-Sharing System

Car-sharing service has experienced a significant boom in recent years, starting from Europe to North America, and recently to Asia. According to Millard-Ball et al. (2005), car sharing, the term described as "open-accessed shared vehicle programs, was intended for occasional trips where a car is needed; station cars for commuters to drive to work from the transit station and systems." It is optimal to rent a car for a short period of time for travelling to a place nearby the user's location. From a socio-economic perspective, car sharing service can be an alternative to ownership and a standard way to use cars. In the current system, as car owners have property rights, they also hold all the liability for purchasing, maintaining, driving, and

dealing with insurance. In contrast to contemporary trends, car sharing service offers a decentralized ownership structure. Drivers purchase the right of mobility (driving) in the time of needs, and service providers bear the responsibility of car maintenance and insurance. Therefore, car sharing service is usually established by a company facilitating the fulfillment of the needs of driving with company's purchased cars, as it has been done by startups like Zipcar.

The procedure of using of car sharing service is the followings: first, consumers should join the membership in advance by registering their driver license and credit card information; second, they check available times–thirty minutes at a minimum and increments of ten minute or more–and adjacent accessible car-sharing pods; third, they can pick up the car and enjoy driving. This is a self-access system without visiting a rental office physically. The development of technology allows reservations to be made, modified and cancelled, and various interfaces enable users to easily access to cars and unlock cars with a smartphone application or smart card (IC) card provided by the firm. The technology led service providers to offer a dispersed network, in terms of multiple parking locations stationed close to neighborhoods such as homes, work places or transit nods in public transportations. Once the users finish driving, they are supposed to return the car to the same place where they rented the car or other pods for the service.

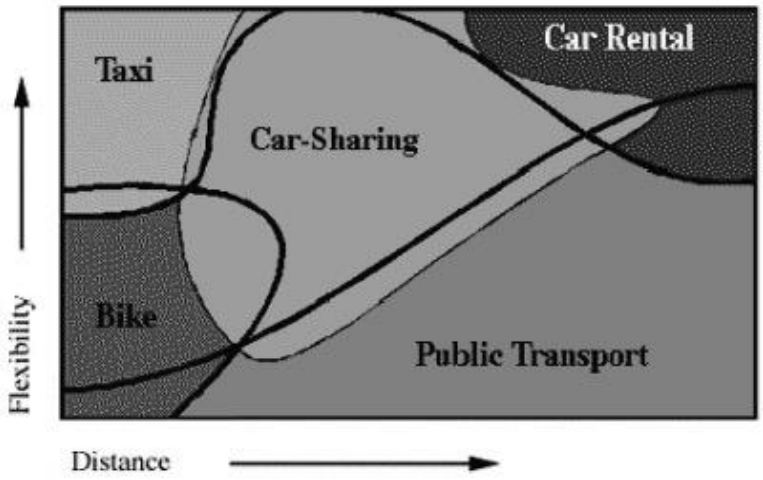
The pricing of car sharing system is different from that of rental car: rather than a daily basis, the fee is allotted hourly or even by minute and per kilometer driven. In addition, car sharing users are not obligated to refill gasoline when they return the car. The car sharing service provides a prepaid gasoline card placed on the driver's visors of the car; thus, the users can fill up gasoline without paying any cost. Another attractive aspect of car sharing to users is that enterprises take over administrative costs including maintenance, cleaning, and parking costs.

### 3.2.2. History of Car-Sharing Economy

According to the TCRP (Transit Cooperative Research Program) Report (2005), the first history of car-sharing programs started from Europe. It can be traced back as far as1948 when the "Sefage" program was designed by a housing cooperative in Zurich, far ahead of the following European programs: "Procotip" in Montepelier, France, established in 1971; Witkar in Amstedam in 1973; "Green cars" in Britain in the late 1970s; and "Vivalla Bill" in Ö rebro, Sweden, in 1983 (Shaheen & Cohen, 2007). On the other hand, car sharing service in North America debuted at a later stage: it first appeared in the 1980s with the Mobility Enterprise program in West Lafayette, Indiana, from 1983 to 1986l; following this program, Short-Term Auto Rental Service (STAR) was operated in from 1983 to 1985 by a private company (Millard-Ball et al., 2005).

The recent car-sharing program is rooted from Switzerland and Germany, dating back to the late 1980s. In 1987, two corporations in Switzerland launched a large-scale of car-sharing service for the first time, which was merged into Mobility Switzerland, and it is still one of the largest car sharing service providers in the world. By 2004, approximately 70,000 users in Germany and 60,000 in Switzerland joined the car sharing membership. The number of memberships increased rapidly every year, with 20-30% annual growth worldwide (Schwieger, 2004). Slower than that in Europe, car sharing service in North America was formally launched in 1994 in Québec city, and was named Auto-Com. Thereafter, CarShaing Portland appeared in 1998 as the first large-scale service in the United States. Consequently, it has been disseminated swiftly across metropolitan regions and smaller communities. Contrary to most of the car sharing businesses in the US operated at a local level—mainly in a specific city or state—Zipcar, is particularly the most successful nationwide commercial model (Millard-Ball et al., 2005).

### 3.2.3. Car sharing as Niche Market




**Source: Schwartz, Joachim. Presentation at Car-Free Cities Working Group Seminar, London, 1999.**

**Figure 4. Car Sharing as "Missing Link"**

Generally, car sharing has been regarded as a flexible alternative. It is called a "missing link" (Britton, 2000; Millard-Ball et al., 2005; Shaheen & Cohen, 2007), as it can connect mobility needs that usually require private automobile, public transportation, taxis, cycling, and walking (Cooper et al., 2000). As there are some users who require private cars, they regard car sharing as utilizing a second car. As figure 2 displays, car sharing relates to other transportation modes, and it is fit for "mid-distance trips where flexibility is required" option. (Millard-Ball et al., 2005). In other words, car sharing is the most cost effective for lengthy trips.

According to Cervero and Tsai's (2003) comparison analysis among car sharing services, rental cars, and taxis in terms of cost-distance efficiency (Figure 2) has the following outcomes: (1) car sharing is better off in cost effectiveness, if consumers rent a car around one hour; (2) taxis are better off, if users have to travel less than five miles as an around trip within four hours; (3) car sharing is better off again, if users travel more than five miles during the same hours; and (4) traditional rental car service is better off, if users drive for more than 10 hours, because user fee is charged on a daily rate basis with unlimited mileage. As the study illustrated, rather than

calibrating in the pool of traditional businesses, car sharing service claims its own domain as a 'niche market' to make up the missing link of transportations. The main differences between car sharing and traditional rental services are its shorter term rental—hourly based instead of daily basis in car rental service—and its decentralized and self-accessing system of vehicles which allows picking up vehicles in the nearest parking lots without visiting designated rental offices. In other words, the key difference of car sharing services from taxis is that 'taxi has a driver.' Contrary to most car sharing services operated as round trips, taxis offer one-way trips, and taxis enable users to travel without driving.

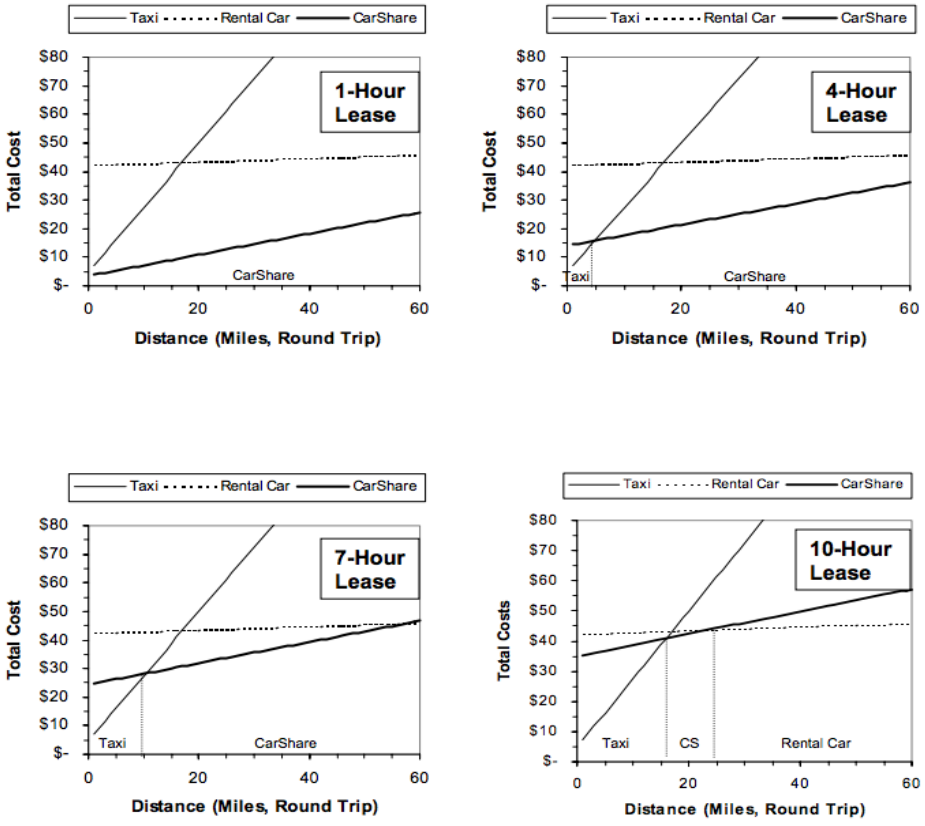



**Figure 5. Cost Comparisons for Car Sharing, Rental Cars and Taxis (Cervero & Tsai, 2003).**

In fact, modes of transportation closest to car sharing are rental cars and taxis, but in terms of cost effectiveness depending on distance, they have slight differences. First, in

comparison with traditional rental cars which are most similar to car sharing services, car sharing is more for short-term rentals.

### 3.2.4. Types of Car Sharing

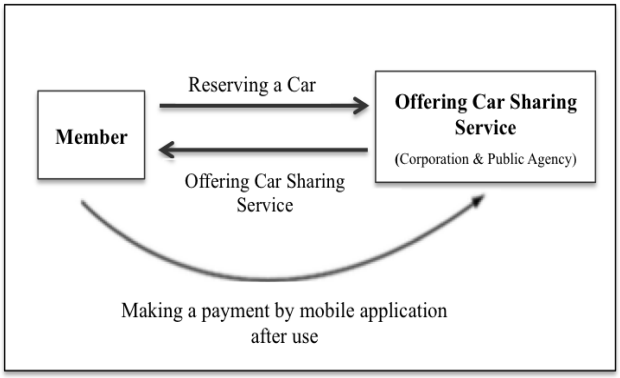



**Figure 6. B2B Car Sharing (Hwang, Kim, & Park, 2013)**

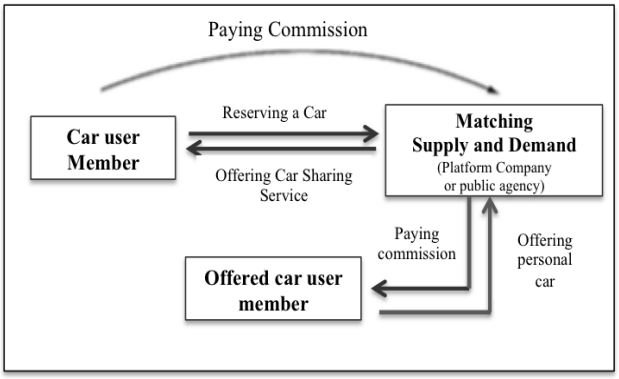



**Figure 1 P2P Car Sharing (Hwang, Kim, & Park, 2013)**

Car sharing models embrace a variety of different business and operational models: for profit, non-profit, and cooperative. The key point of B2C business models is that a company distributes the service by supplying acquired vehicles throughout a city, and the service is mainly for maximizing profits as well as supporting sustainable mobility. (Cohen & Kietzmann, 2014). In order to keep idle time of vehicles to a minimum and manage economic costs and benefits for providing appropriately distributed services, customer interface is designed in a way that members can search nearest available vehicles, open the car, and make a payment with a smartphone application, and drive the car only when the users need it. Moreover, the firm provides the system whereby the company covers gas, maintenance, and insurance; in other words, the company provides enough safeguards to customers, so as to protect them from liability for damage. In addition, commercial car sharing services, like ZipCar, provide a variety of automobiles at different rates, even high-end cars to meet customers' different tastes. Under the business venture scenario, most of profit-making car sharing services are led by startups, funded mainly by venture capitalists.

The P2P model is "some form of intermediation using web and/or mobile technology to connect owners (i.e., private individualists, not firms) of sub-optimized products with potential drivers" (Cohen & Kietzmann, 2014).

One of the most remarkable B2C and P2P cases is that car-sharing business services are operated by automakers (Firnkorn & Müller, 2012). Different from other incumbent players in major mature industries disrupted by sharing economy, major auto producers, rather than letting the popularity of car-sharing calibrate their businesses, decided to embrace the car-sharing trends; these participating auto-producers range from Car2Go created by Daimler, already available in Hamburg, Vancouver and Austin, Texas, and Quicar operated by Volkswagen in the northern German city to DriveNow run in a cooperation between Sixt, car rental company, and BMW (Gardiner, 2013; Wüst, 2011). Moreover, one of the most prominent car-sharing enterprises, Zipcar, has been acquired by Avis, the giant car rental company (Gardiner, 2013).

There are two big motivations for automobile producers to take part in a game of car-sharing based on Porter (1980)'s competitive advantage: pushed by automakers and pulled by cities (Firnkorn & Müller, 2012). On the one hand, as a pulled strategy, producers positioned themselves as "Eco-Branding", a business strategy defined by Orasto (2006), because of increasing demands for taking responsibility for global problems such as greenhouse gas emission (McGovern, 1998). According to Firnkorn & Müller's analysis of Daimler's P2P car sharing service car2go's impact on private vehicle ownership, sharing cars leads to less use of resources and lower static land consumption along with the decreased number of driving and parking individually, and even greenhouse gas reduction. Even more, the producers try to offer electric cars as an array of their efforts to contribute to environment such as DriveNow provided BMW (DriveNow, 2011).

Another pulled strategy is seeking additional business opportunities in a new segment. As the interview of Richard Steinberg indicates, automakers reposition themselves in the sharing economy marketplace not only as "the provider[s] of premium cars" but also as the providers of "premium mobility services" (PwC, 2015). They view younger generations not necessarily as the premium automobile market because of their consuming behavior which is using car share rather than owning cars (PwC, 2015). Thus, they try to provide customers with the freedom, flexiblity, and convinece of mobility by offering their products. In the future, they wish those experiences reach out to those customers who are young, who shun car owenership, or who remain loyal as potential future customers when they may feel differently in life (Gardiner, 2013).

<table>
<tr><th rowspan="2">Types of Business</th><th rowspan="2">Domestic Business Case<br>(Korea)</th><th colspan="2">Foreign Business Case</th></tr>
<tr><th>North America</th><th>Europe</th></tr>
<tr><td rowspan="4">Business to Customers (B2C)</td><td colspan="3">Auto-manufacturer provision</td></tr>
<tr><td></td><td></td><td>Daimler Car2Go (Germany),<br>BMW Drive Now (Germany),<br>VolksWagen Quiar (Germany),</td></tr>
<tr><td colspan="3">Startups</td></tr>
<tr><td>SoCar (socar.co.kr), GreenCar (greencar.co.kr),<br>Korea Car-Sharing (wesharecar.net),<br>HourCar Sharing (hourcar.co.kr)</td><td>ZipCar, GoGet, CityCarshae, Streeet Car, CarShareHFX (Canada), Co-Auto (Canada)</td><td>Cambio (Germany)<br>Mobility CarSharing (Switzerland)<br>Bikollekivet (Norway)<br>Greenwheels (Netehrlands)</td></tr>
<tr><td>Peer to Peer (P2P)</td><td>legally prohibited</td><td>DriveMyCar.com<br>RelayRides, Lyft<br>FlightCars</td><td>BuzzCar (France),<br>Speelotheken(Netherlands)</td></tr>
</table>

**Table 1. The Landscape for Car-sharing Economy**

## IV. Theoretical Background of Sharing Economy

### 4.1. Political Economy Perspective of Sharing Economy

Up to the present, the dominant perspective of human behavior centered on "homo-economicus", human-beings who try to obtain maximized utility for themselves under the given available information about perceived opportunities and other constraints both naturally and institutionally in order to achieve attain their established goals. The term, "economic human", was first used by John Stuart Mill's work on political economy (1874):

"Political economy does not treat the whole of man's nature as modified by the social state, nor of the whole conduct of man in society. It is concerned with him solely as a being who desires to possess wealth, and who is capable of judging the comparative efficacy of means for obtaining that end." (Mill, 1974)

The discipline of perceiving self-interested individuals as rational human beings who are prone to optimize their utility function has been formalized extensively in social science, especially in economics. Even Adam Smith mentioned in his book Wealth of Nation: "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest (1986)". This traditional rational utility model upholds the assumptions of success presented by many renowned theories: "tragedy of the commons" (Hardin, 1968), the game theory's "prisoner's dilemma" (Rapoport and Chammah, 1970), and "The Logic of Collective Action" (Olson, 1965), as calculating behaviors to maximize expected benefits and maximize utility under immediate efficiency.

However, empirical studies by behavior scientists challenge the previous assumption that human being is not rational in their decision-making but more subjective in making irrational

choices. According to the framing effects of prospect theory (Kahneman and Tversky 1979), most people's utility function is reference-dependent. In other words, the expected utility would be displayed in different perceptions depending on different reference points (Kahneman and Tversky 1979). In addition, Kahneman and Tversky (1979) argue that humans are vulnerable to risks, and that people's attitude toward risks associated with gains would be conditional on losses rather than keeping gains. Even rational theorists point out that even though collaboration is better off to humans themselves for maximum utility, people behave against the rationality when some institutional arrangements determining collaborative action are not fully satisfied (Olson, 1965; Hardin 1968; Rapport and Chammaha, 1970).

For this issue, Ostrom (1990), Nobel laureate, first illustrate a theory in the "efficiency of commons"-based societies by presenting the empirical studies as successful examples of collaborative consumption behavior. In her study, Ostrom (1990) recognizes an autonomous situation as space for creating trust in organizational processes through eight design principles based on congruent rules, the existence of clear boundaries and community memberships, among others. The study illuminates the solution to the "problem of making credible Commitments" by changing the social recognition of institution and institutional cost into a new supply of new institutional mechanism (Ostrom 1990; Ostrom 2003). These findings nurture the capability among collaborating partners to communicate or build mutual trust, which is to overcome barriers and encourage collaborative consumption.

### 4.2. Creating Social Responsibility (CSR) and Creating Shared Values (CSV) Perspectives on Sharing Economy

Porter and Kramer (1999) first identified the concept, Creating Shared Values (CSV). The early stage of CSV, focusing on creating the social value, is more likely to be adopted in nonprofit organizations (Porter and Kramer, 1999). Since 2006, CSV has been developed to the new concept, Corporate Social Responsibility (CSR) as a consequence that corporate philanthropy value for creating social value, including the private sectors (Sehti, 1975; McFarland, 1982; Porter & Kramer, 2010). CSR is one of the corporate's core business strategy of "social" starting to be adapted to corporations (Koter and Nancy, 2005).

According to Porter and Kramer (1999), CSV was defined "policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates". Porter and Kramer (1999) claimed that CSV can be as a new conception of capitalism, playing a role as a powerful driver of economic growth and balance between business and society (2006; 2011).

The concept, CSR, was quite successful among many leading corporations embracing the concepts and practicing in the managerial stage. Those activities was regarded as corporation's ethical duty to social and environmental problems (Donaldson & Dunfee, 1999); political motivations (Matten & Crane, 2005); or even as a buffer for dealing with the risk of business reputation (Fombrun & Gardberg, 2000). Although CSR is high-profiled trendy word in the business world, Demebek, Singh, and Bhakaroo (2015) regard it still controversial and debatable both academically and practically.

However, in sharing economy, CSV has another potential to develop its scheme through not only the new business but also existing enterprise. Porter and Kramer (2011) develop CSV based on three ways that "reconceiving products and markets" by finding out social problems, "redefining productivity in the value chain" by enhancing social, environmental and economic capabilities of supply chain members, and "enabling local cluster development" by collaborating with suppliers and local institutions to achieve developmental goals.

Although there is debate regarding a blurred line between CSR and CSV, compared to CSR, CSV contains more developed and elaborated concept of collaboration, which is emphasized in sharing economy. Generally, CSR is mainly focusing on doing good, exercising agenda determined by external reporting and personal preference, and having the limited corporate budget (Koter and Nancy, 2005). In the contrary, CSV embraces the value that economical and societal benefits related to the cost, joining the activity with company and community value creation (Porter & Kramer, 2010, Porter & Kramer, 2011). Therefore, under the foundation on CSV, the new business model could be developed by letting consumers actively participate together and focusing on the community and the societal benefits at the stage in designing business model.

Particularly, car-sharing service can be a good example of this sharing economy business based on CSV. In order to implement sharing economy, it is necessary to make stakeholders participate and collaborate in a system. Car-sharing economy conceived diverse value to both customers and service-providers. In United States, according to Rifkin (2014), through car-sharing service, total cost of ownership reduced(from 0.47 to 0.24 car-ownership per family), and a pattern of driving changed (reduce 31% of driving compared to driving own car), and reduce CO2, led by less driving. In these days, even traditional automaker produce even try to

join with other partners in a car-sharing economy through providing car, or they operate a system by themselves to let consumer participate in environmentally friendly behavior and reduce customers' total cost of ownership.

| Company | Purpose of Car-Sharing Business | Form | Contents | Location/Time |
|---|---|---|---|---|
| PSA | Attract new customer segment | Operate Directly | Rent 500 number of all types of vehicles(cars, trucks, bikes) in dealer shops | 5 cities in France/ July 2009 |
| Ford | | Supply cars | Provide 1,000 of new cars by joining "University Car-Sharing" program run by Zip Car | 250 number of Universities in the United States |
| Volkwagen | Enhance platform | Supply cars | Launch Quicar Car-Sharing program in Hanover by providing their latest model, Golf BlueMotion and New Beatles | Hanover Germany/ October 2011 |
| Honda | | | Provide Civic HED(specialized in Car-Sharing system) model to CitiCar Club, the biggest car-sharing service enterprise | entire region in the United Kingdom/ 2008 |
| BMW | Promote environmental-friendly car | Operate Directly | -Launch Drive Now by teaming up with Sixt rental car company<br>- Provide electronic cars (i3) | München and Berlin in Germany/ April 2011<br>San Francisco in the United States |
| Toyota | | Supply cars | Provide their Hybrid model, Prius Plugin by joining with ZipCar | 4 cities in the United States/ January 2011 |
| GM | Reduce customer's TCO (Total Cost of Ownership) | Equity Participation | Joining with RelayRides and provide P2P Car-sharing service to their existing customers | entire region in the United States/2012 |

**Table 2. CSV participation in traditional auto manufacturers through car-sharing economy**

### 4.3. Theoretical Background on Attitude, Satisfaction, and Loyalty Theories

In Fishbein and Ajzen's research (1980), "intention", it is assumed that "most behaviors of social relevance are under volitional control and are thus predictable from intentions". Thus, intention refers to the immediate determinant of behavior, and accurate prediction of behavior link to appropriate measure of intention. Aizen (1991) argued that behavior intention reflects person's willingness and motivation from the behavior.

Several main theories are relevant to this research including the Theory of Planned Behavior (Aizen, 1991) and the Technology Acceptance Model (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (Venkatesh et. Al, 2003). The theory of Planned Behavior (Aizen, 1991) is extension version of the Theory of Reasoned Action (Fishbein & Aizen 1975), and has been utilized studies of understanding human behavior, even including online commerce (Venkatesh, Thong, & Xu, 2012). In addition, Technology Acceptance Model (Davis, 1989) is developed form of corporate information technology-acceptance study. Two new relevant and valid measurement scales constructed to examine user acceptance of information technology: perceived usefulness and perceived ease of use (Davis, 1989). Last, the Unified Theory of Acceptance and Use of Technology (Venkatesh et. Al, 2003) is developed after review of eight existing remarkable models of user adoption of online commerce.

In macro model approach (Hom, 2000) of Satisfaction, Oliver(1997) defined satisfaction as "the consumer's fulfillment response", that is to say; "a judgment that product or service feature, or the product of service itself, provided (or is providing) a pleasurable level of consumption related fulfillment, including level of under- or over-fulfillment". Satisfaction is first focused on consumer's experience, who uses a product or service, whereas a customer pay for the price for the goods and service, it is based on experience and use of product or service (Oliver, 1997). Secondly, satisfaction is considered as a feeling, short-term attitude under in an array of circumstance, which is different from observable behaviors, for example, product choice, complaining, and repurchase (Hom, 2000). Third, satisfaction has a barometer at both lower and upper level (Hom, 2000).

The definition satisfaction can be divided as two different aspects, either as an outcome or as possess (Yi, 1989). In the aspect of consumer satisfaction as outcome-oriented approach,

from consumption experience (Yi, 1989), including “the buyer’s cognitive state of being adequately or inadequately rewarded for the sacrifices for the sacrifices he has undergone”(Howard and Sheth, 1969); “an emotional response to the experiences provided by, associated with particular products or services purchased, retail outlets, or even molar patterns of behavior such as shopping and buyer behavior, as well as the overall workplace”(Westbrook and Reilly, 1983); and “the summary psychological state resulting when the emotion surrounding disconfirmed expectation is coupled with the consumer’s prior feelings about the consumption experience”(Oliver, 1981).

Another aspect, as possess-oriented approach (Yi, 1989) is expounded as “an evaluation rendered that the consumption experience was at least as good as it was supposed to be” (Hunt 1977); “as evaluation that the chosen alternative is consistent with prior belief with respect that to the alternative” (Engel and Blackwell, 1982); and as “the consumer’s responded toe the evaluation of the perceived discrepancy between prior expectations or some other norm of performance and the actual performance of the product as perceived after this consumption” (Tse and Wilton, 1988).

## V. Hypothesis Development

Building on the Beckerian consumer utility framework, in the context of sharing behavior in cyber space, major studies have done by Rochelandet and Le Guel’s (2005) of music sharing and Hennig-Thurau, Henning, & Sattler(2007) of movie sharing illegally, based on the framework for understanding the way of consumer’s negotiation behavior sharing versus ownership, and finally the research studied the sharing economy business service by Lamberton and Rose (2012) in commercial sharing system. Commercial sharing system(Lamberton & Rose,

2012) is "market managed systems that provide customers with the opportunity to enjoy product benefits without ownership. Thereby, it excludes gift giving, sharing without compensation and transferring ownership permanently, which is located between traditional forms of sharing amongst family and usual market exchange activities (Belk, 2014). The study built by Lamberton and Rose (2012) is based on utility theory apporach, but sustantially refined and extended in several ways.

Lamberton and Rose (2012) accounted for " the peceieved risk of scarity related to sharing" is a central determinant of attracting commercial sharing systems that beyond cost-related benetfits of sharing by examing three studies related with car sharing program, cell phone munute-sharing program, and bicycle sharing program. Satama(2014) studied 'the consumer adoption process(bahavioral intention)' of access-based consumption services through C2C business model, in a case of Airbnb. Möhlmann(2015) developed the framework on the determinants of choosing a sharing option and the determinants of choosing the option again by collecting data from both B2C sharing economy service:car2go users and C2C sharing economy model: airbnb users, which refer to a from of rdistribution markets or collective lifestyle (Botsman & Rogers, 2010). However, so far, there is no comprehensive and integrated study in consumer's attitude, intetntion to use and satisfaction in sharing economy business service. Morever, there is no study that examine consumer's attitude, intetntion to use and satisfaction in the same intudstry, for example examining consumers's attitude in B2C and C2C carsharing service.

This research is consistent with rational models, in which consumers seek products that provide the greatest amount of benefit at the minium cost spossible, following previous study. The present study explored ten uility categoriesed utility factors (*transaction utiltiy, mobility*

*utility, storage utitliy, anti-industry utiltiy, social uility, sustaiblibty utility, techonology utiltiy, emotional utility, economic utility, trust utiltiy)* that affects attitute; satisfaction and loyalty in exsisiting customer who have experienced car sharing service; willing to use and expected satisfaction in potential customer who have willing to use the service in near future. The first six categories of utility mainly plugged in Lamberton and Rose's work (2012), and referring to Hennig-Thurau, Henning, & Sattler (2007) and Rochelandet and Le Guel's (2005). This study purpose extened utilitty factors, and discuss the major determinats that drives consumer behavior in B2C and C2C in car sharing service, as is presented in figure 8.

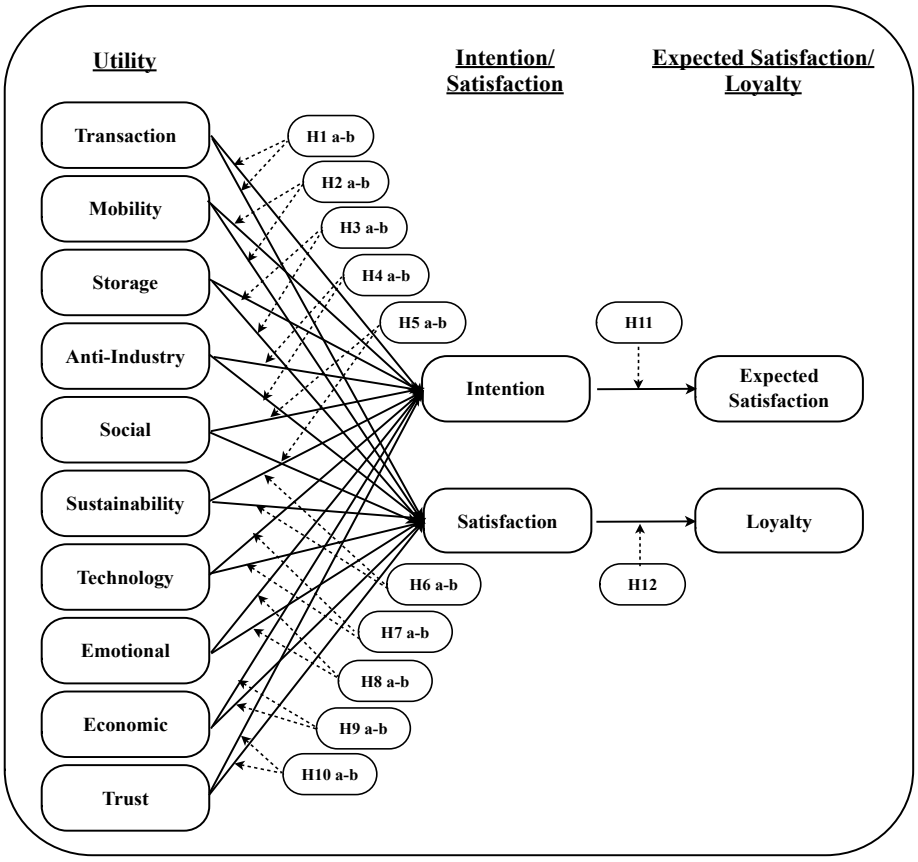



**Figure 2 Structural Model of Utility, Intention, Satisfaction & Loyalty in Car-Sharing Service**

**Modified from Lamberton and Rose (2012), Hennig-Thurau, Henning, & Sattler (2007), and Oliver (1980)**

### 5.1.Effects of Transaction Utility on Intention and Satisfaction

According to Thaler (2008) transparent reference price is significant to transaction utility, in other words, it affects the role of the normal or refrence price transparency. Transaaction utility reprsents the "perceived deal value" in sharing economy servrvice, more or less equivlanet to the transtacion ulity provided by ownerhsip (Thaler, 2008). In terms of car sharing service, using car sharing service can result in a transaction utility that refers not to the value of the consumed goods(i.e. driving car with ownerhip) but to "the perceived merits of the 'deal'" or, in other words, customer's satisfaction of obtaining the monetary interests associated with the access (Grewal, Monroe, and Krishnan 1998). In this research, transaction utility embrace service quality, the experience a customer (Seiders et al., 2007), which is a major antecedent to intention as well as satisfaction and loyalty (Cronin & Taylor, 1992). This leads to the following hypothesis. H1a is applied for those who never used car sharing and

**H1a:** The perception on transaction utility affects higher levels of intention to use the car-sharing service.

**H1b:** The perception on transaction utility affects higher levels of satisfaction of using the car-sharing service.

### 5.2. Effects of Mobility Utility on Intention and Satisfaction

In previous study, Hennig-Thurau, Henning, & Sattler (2007) refers to mobility utility as "freedom of flexibility", without constraint of device when using product. Lamberton & Rose (2012) crysatalize the concept pertintent to car sharing service: avilble in vehicles in many different location; making up the missing link of transportations (private automobile, public transportation, taxis, cycling, and walking) (Cooper et al., 2000; Britton, 2000; Millard-Ball et al.,

2005; Shaheen & Cohen, 2007). Not only B2C car sharing service provided by car sharing service, but also automobile manufacturers offering the same purpose of service in car sharing service; and C2C car sharing service provide convinenece to access to cars when usrs want to move. Thus, it is hypothesised that

**H2a:** The perception on mobility utility affects higher levels of intention to use the car-sharing service.

**H2b:** The perception on mobility utility affects higher levels of satisfaction of using the car-sharing service.

### 5.3. Effects of Storage Utility on Intention and Satisfaction

Hennig-Thurau, Henning, & Sattler(2007) and Lamberton & Rose (2012) explain storage utility as “product stroge advatntages obatained through sharing products”. For instance, in car sharign systems, car sharing service business provides the accessible car-sharing pods in scattered location (e.g. stationed adjacent accessible car-sharing pods: near by homes, work places, and transit nodes in public transportation). Furthermore, since responbility of parking cost and maintanece of car attributes to service provider, users are unrestricted from libailbity of strorage. This leads to the following hypothesis:

**H3a:** The perception on storage utility affects higher levels of intention to use the car-sharing service.

**H3b:** The perception on storage utility affects higher levels of satisfaction of using the car-sharing service.

### 5.4. Effects of Anti-Industry Utility on Intention and Satisfaction

According to Lamberton & Rose (2012), anti-industry is " psycchological gains derived from a decision that denied support traditional ownership market". Veblen(1899) first observed "consiscous consumption", which is purchasing extravagance or lavis ite to show off one's identity. During the indusrtrial age, which is previous generation, mass production and mass consumption was two main stream of suuply and demand, and it was a siganal of expressing social status to society. However, Berger and Ward (2010) raise the contrast concept to the past, "inconspicious consumpiton", as "the use of subtly marked products which are misrecognized by most observers, but facilitate interaction with those who have the requisite cultural capital to decode the subtle signals" (Eckhardt, Belk, & Wilson, 2014). Recently, the present time sent in as the era of rising inconspicuous consumption. One of the main motivation is the appearance of "luxury for the masses" (Taylor, Harrison, & Kraus, 2009), which is affordable and proliferated to the public, and it means democratizing from status and class expressed by luxury brands.

In the last 5 years, as the new business models has grown massively, the ne spawned service help people to purchase the chance to use of product that otherwise their spare resource instead of transmit the ownership (Radka & Margolis, 2011). Even in automobile industry, one of the prodigal items to show one's wealth, if one pay a small fee of membership, it is available to access a car via car-sharing service in these days. Not only the car-sharing service provide by startups, but also BMW, the brand which used to be a symbol of the social status or economic capital to people (Bardhi & Eckhardt, 2012), it is accessible through DriveNow, the car-sharing service operated by BMW. Thus, luxury consumption is no longer a symbol of social class to consumers (Hemetsberger et al., 2012), and they are pursuing more meaningful experience rather than conspicuous consumption. Therefore, this is hypoethesized,

**H4a:** The perception on anti-industry utility affects higher levels of intention to use the car-sharing service.

**H4b:** The perception on anti-industry utility affects higher levels of satisfaction of using the car-sharing service.

### 5.5. Effects of Social Utility on Intention and Satisfaction

In research Lamberton & Rose (2012), social utility is " the gains that may accrue to sharing participants in form of approval by reference group". As complementary theories, Gardete(2015) elucidate "consumers' willingness to buy is shown to be positively correlated with responsiveness to social influence". Based on Technology Acceptance Model (Venkatesh and Davis, 2000), Social influence can be defined as the degree of consumer behavior dependence on peer (family, friends, etc.), particularly; he or she should use technology (Venkatesh, Thong, and Xu, 2012). Since collaborative consumption is rapid growing trend, and affecting consumer behavior widely (Botsman & Rogers, 2010), to extent the scope of social utility, the present research include trend affinity (Möhlmann, 2015) in sharing economy. Chief among this trends are millennial, so called generation Y, who is age between 21-34 (The Nielsen Company, 2014; PricewaterhouseCoopers. 2015). Their consuming is conscious to follow a trend to use innovative and fashionable goods and a service in order to their social identity and express a positive feeling, and sometimes the access is better off ownership to reach the trendy products (Moeller and Wittkowski, 2010). Additionally, Bardhi & Eckhardt (2012) find out that, contrast to traditional rental was considered as the stigmatization, recent access has reflected as cool and trend as an alternative to ownership (Botsmon & Rogers, 2010; Gansky, 2010). ZipCar caught this phenomenon; project it in brand image, which promote access society in general as well as its own

trend, as a more hip and economically viable consumption model for consumers in (Levine, 2009). It is hypothesized:

**H5a:** The perception on social utility affects higher levels of intention to use the car-sharing service.

**H5b:** The perception on mobility utility affects higher levels of satisfaction of using the car-sharing service.

### 5.6. Effects of Sustainability Utility on Intention and Satisfaction

Sustainability utility (Lamberton & Rose, 2012) mentioned as "belief that sharing is a way to protect environment or reduce wastes" (Minton & Rose, 1997). Olsen, Slotegraaf, & Chandukala (2014) that introduction of green product can influence brand attitude. Sharing economy has been reckoned as a positive mode of environmental and ecological consumption. The less material required, the more waste is avoided, and it decreased over-production (Mont, 2004). In fact, Botsman and Rogers (2010) revealed that car sharing service users reduced their emissions by up to 50 percent per head in their studies. By the same token, automobile manufacturers launch their own car sharing service (e.g. Car2Co by Daimer), even introduce hybrid or electric car for providing service (e.g.DriveNow by BMW) as part of their efforts to be responsible to environmental problem such as greenhouse gas emission. This leads to the following hypothesis:

**H6a:** The perception on mobility utility affects higher levels of intention to use the car-sharing service.

**H6b:** The perception on mobility utility affects higher levels of satisfaction of using the car-sharing service.

### 5.7. Effects of Technology Utility on Intention and Satisfaction

The introduction of smartphone and various applications via mobile devices, assure the real time access to data and service. For instance, in car sharing service, smartphone and Internet become an important factor in facilitating usage (Botsman & Rogers, 2010). Following the Financial Times article, Robin Chase(2015) articulate that technology –the internet, wireless technology, online payment system, contactless cards – enable the first wave of car sharing service, meeting the demand of consumer who want access car continently and promptly. Moreover, ubiquitous smartphones, technology platform, incremented number of technology familiar population led the second wave of collaborative consumption, a new paradigm of business model, seamlessly connecting among transportation nodes and satisfying mobility desire (Chase, 2015). This leads to hypothesize the following

**H7a:** The perception on technology utility affects higher levels of intention to use the car-sharing service.

**H7b:** The perception on technology utility affects higher levels of satisfaction of using the car-sharing service.

### 5.8. Effects of Emotional Utility on Intention and Satisfaction

Psychologists, economists, and sociologist have endeavored monumentally to find out why happiness is important and how to increase, and the best way to measure it (Dunn, Aknin, & Norton, 2008; Kahn & Isen, 1993; Lyubomirsky, King, & Diener, 2005). Peculiarly, during

economic recession, advertisers and marketers are more inclined to conduct intuitive campaign promising happiness to touch on consumers such as "Open Happiness" campaign launched by Coca-Cola, encouraging consumer's small break with others (Mogilner, Aaker, & Kamvar, 2012). However, not only commodities or groceries advertisement, but also BMW promotes joy of driving though "Stories of Joy" as a interactive consumer-created global communication campaign (Mogilner, Aaker, & Kamvar, 2012; J.D. Power and Associates, 2010). On this wise, many advertisements strive to appeal emotion's to customers to work better on selling brands and to differentiate themselves among other competitors (Edell, Agres, Dubitsky, & Lowe Marschalk, 1991). Hence, emotional appeals are significant to consumers' social and psychological need for purchasing behavior (Belch & Belch, 2015). Hence, the eighth hypothesis reads:

**H8a:** The perception on emotional utility affects higher levels of intention to use the car-sharing service.

**H8b:** The perception on emotional utility affects higher levels of satisfaction of using the car-sharing service.

### 5.9. Effects of Economic Utility on Intention and Satisfaction

Economic utility is discussed as main driver of sharing economy. As it discussed above, Bardhi & Eckhardt (2012) called sharing economy as access-based economy, because people use sharing economy service for their competitive advantage rather than collaborative motivation. In addition, according to well -established the fact that changes in income have significant influence on aggregate consumption patterns (Hall & Mishkin, 1982). Not only the research mainly focused on aggregated income changes and the effects on aggregate spending, Carlson et al.(2015)'s study reveal the effects of budget changes: consumers tend to select less variety--the

number of different items within budget allocation—when their budget contracts to a particular leel, because of avoidance of feeling of loss with budget constraints. After the financial crisis in 2008, the individual income as well as household income shirked. Thus, the more diversified and accessible options through sharing economy can be benefit to those consumers.

Furthermore, as Sundararajan (2014)'s argument, particularly the peer-to-peer of sharing economy model can be a cornerstone for micro-entrepreneurship that is the citizen have an opportunity to run small business without all-in their capital with the least amount of risk. The cases of Uber or Airbnb, and GetAround and RelayRides, peer-to-peer car-sharing service are representative. In return, citizens obtain economic benefits on their pocket by using their idle resource. This leads to the following hypothesis:

**H9a:** The perception on economic utility affects higher levels of intention to use the car-sharing service.

**H9b:** The perception on economic utility affects higher levels of satisfaction of using the car-sharing service.

### 5.10. Effects of Trust Utility on Intention and Satisfaction

Based on securing and ensuring feelings during transaction and reliability toward service provider, customers feeling trust (Wirtz, and Lwin, 2009). Generally, trust is regarded as important determinants of consumer's behavior, particularly it is important component in terms of sharing economy, because trust refers to trust in provider of sharing economy service and to the other consumer who is participating in (Botsman, 2012). Ostrom (1990) elaborates eight design principles for common pool resource institutions that is institutional structures to build trust. In her later work, she emphasize

trust and reciprocity is important components to make people cooperate (Ostrom, 2003). Thereby, trust is considered to a important principle to choose sharing economy option.

Moreover, trust is important because peer-to-peer economy maintains mutual reputation assessed by supplier and demanders maintaining quality by reputation systems and active supplier's quality, and insurance for when the crunch comes. Peer to peer economy is becoming a reality and the phenomenon is carrying on in micro-entrepreneurship as well. Sundararajan (2014) also actively supports peer economy which can nourish micro-entrepreneurs with the opportunity to run small businesses without taking all-or-nothing start-up based on their idle capital.

Based on this this backgrounds, it is hypothesized that

**H10a:** The perception on trust utility affects higher levels of intention to use the car-sharing service.

**H10b:** The perception on trust utility affects higher levels of satisfaction of using the car-sharing service.

### 5.11. Effects of Intention, Satisfaction and Loyalty on Utility

Further, this study hypothesized effects of attitude on intention to use, satisfaction, expected satisfaction and loyalty. For potential users of B2C and P2P, this study examines effect of utilities on Intention and effects of intention on expected satisfactions for both.

**H11:** Higher levels of intention to use are associated with higher levels of customer loyalty in car-sharing service.

For existing users of B2C, this study examines effect of utilities on satisfaction and effects of loyalty on expected satisfactions for both.

**H12:** Higher levels of satisfaction of service are associated with higher levels of customer loyalty in car-sharing service.

## VI. Methodology

### 6.1. Data Collection

This study examined the factors of intention, satisfaction, and loyalty by measuring utility on car sharing service that is one of the most prototypical cases in sharing economy. Data for this study were collected through a combination of online and offline survey during one month, September 2015. Online survey was conducted by using online platforms from multiple sources, including online community, messenger, social network and blog with 209 respondents. Offline survey started in September and went through a month with 194 respondents in many cities. This survey included questions regarding demographic factors such as gender, age, education, income, filed of work, and geographically location, the ownership of car, and transportation usage pattern. A total of 403 of respondents completed the survey, yielding a response rate of 96.4%. This study investigated by multi-item scales to measure each of the constructs that served as the basis for the questionnaire item by a 7-point Likert scale from 1 = *strongly disagree* and 7 = *strongly agree*, based on scales from previous studies (Cho, 2013).

The items developed for this survey were based on scales from previous studies Oliver,1997; Rochelandet and Le Guel,2005; Hennig-Thurau, Henning, & Sattler, 2007; Lamberton and Rose, 2012 ) and were modified to serve the objective of study (Cho, 2013). Particularly, the items of utility measurement in questionnaire for this study were developed

based on the concept of Beckerian consumer utility framework (1965) .Survey items for measuring utility modified from previous studies on sharing economy and behavior (Rochelandet and Le Guel's, 2005; Hennig-Thurau, Henning, & Sattler, 2007; Lamberton and Rose, 2012). By modifying crieteria of utlity from previous study by Lamberton and Rose(2012), this study applied following utiilities: transaction utiltiy, mobility utility, storage utitliy, anti-industry utiltiy, social uility, sustaiblibty utility, techonology utiltiy, emotional utility, economic utility, trust utiltiy.

Two different business models in sharing economy services were surveyed and analyzed to test the hypotheses. The B2C car-sharing services including SoCar and Greencar, a frontier car-sharing service enterprises in Korea, is growing more than hundred times in the number of membership and increasing thirty times in the number of offering car. For example, SoCar first start a business in 2013, it is currently offering 3,000 cars (SoCar, 2015) and holding a million memberships for the service (SoCar, 2015). Even though car-sharing service in Korea is still in its embryonic stage, first starting from 2013, compared to the revenue growth rate of 2015 Korea car-sharing service market is 231% year on year, the revenue of SoCar grows up 240% in 2015 over previous year, which is 50billion KRW (4.21 million USD) (expected, SoCar 2015). The research measure utility, overall attitude such as intention to use the service to whom don't have experience of the service; and satisfaction and loyalty to whom have used the service. Inasmuch as B2C car-sharing service market is still fledgling business, P2P car sharing is not yet in operation in Korea and customers are unfamiliar with a concept of peer-to-peer car sharing. Hence, the study only analyzes the determinants of expected satisfaction and loyalty in C2C car-sharing service.

This study conducted a pilot study to elaborate wording and structure of the survey. This study also applied back translation technique to examine translation of different languages. The present study measures Cronbach's alpha to test of reliability for each multi-item scale. Cronbach's alpha values were 0.89 for transaction utility, 78 for mobility utility, 0.81 for storage utility, 0.89 for anti-industry utility, 0.90 for social utility, 0.88 for sustainability utility, 0.93 for technology utility, 0.80 for emotional utility, 0.83 for economic utility, 0.73 for trust utility. In B2C car sharing service case (Study1), Cronbach's alpha values were 0.93 for willingness to use the service and 0.94 for expected satisfaction from non-users; 0.94 for satisfaction and 0.90 for loyalty. In P2P cars sharing service case, as a potential customer to rent a car by peer, Cronbach's alpha values were 0.93 for willingness to use the service 0.96 for expected satisfaction; as a potential customer whom would share their own car, the values were 0.94 for willing to share my car and 0.95 for expected satisfaction for sharing my car. In sum, the analysis of the measurement models of both studies reveals different quality criteria to be well fulfilled in both studies.

### 6.2. Data Analysis

#### 6.2.1. Study 1: Business-to-Customer Car Sharing Service

Study 1 explores the factors that affect to overall attitude—satisfaction and loyalty from users, intention and expected satisfaction from potential users—in car-sharing service. To report the different results for the survey adequately, the results of both studies are described separately. First, the results of study 1 on the B2C car sharing service, the samples are collected from SoCar users, one of the major B2C car-sharing services in Korea. The study applied factor analysis to check validity of utility, satisfaction, intention and attitude.

The study note that demographic make of B2C car-sharing customers are roughly mirrors the sample. Twenty-nine percent of respondents owned their own car, 84% of are user respondents are 20-35 years old who is the main target of car-sharing service, Additionally, based on the Nielsen Company (2014) and PricewaterhouseCoopers(2015) survey, millennial (generation Y) led the sharing economy trends, who is age between 21-34. Among 25% of user group has their own car, while 30.4% of non-users have a car.

| **B2C Car-Sharing Service** | | | |
|---|---|---|---|
| **Variable** | **Specification** | **User (N=110)** | **Non user (N=355)** |
| Gender | Male | 49.60% | 31.50% |
| | Female | 50.40% | 67.20% |
| Married | Married | 53.50% | 31.50% |
| | Unmarried | 46.50% | 67.20% |
| Age | Under 20 | - | 1.20% |
| | 21-25 | 24.00% | 34.20% |
| | 26-30 | 47.20% | 36.20% |
| | 31-35 | 12.80% | 13.50% |
| | 36 and older | 16% | 14.40% |
| Education | Under high school | 0.08% | 2.90% |
| | Associate-college enrolled | 2.40% | 2.50% |
| | Associate-college graduated | 8.70% | 4.20% |
| | Four-year-university enrolled | 28.30% | 25.80% |
| | Four-year-university graduated | 47.20% | 46.70% |
| | Master degree or more | 12.60% | 17.90% |
| Occupation | Student | 42.90% | 2.90% |
| | Employed | 35.70% | 2.50% |
| | Self-employed | 5.60% | 4.20% |
| | Public servant | 2.40% | 25.80% |
| | Housewife | 3.20% | 46.70% |
| | etc. | 10.30% | 17.90% |
| Region | Seoul | 52.40% | 58.00% |
| | Gyeong-gi | 24.60% | 24.40% |
| | Chung-cheong | 7.90% | 12.60% |
| | Gyeong-sang | 12.70% | 3.80% |
| | Junl-la | 2.40% | 1.30% |
| | Jeju | - | - |

**Table 3. Sample Characteristics of Study 1: B2C Car Sharing Service**

The results of study examined by factor analysis to check validity of major constructs. Using principal component analyses as the extraction method and Varimax rotation methods with Kaiser Normalization. The results of factor analyses shows that items represent major variables, with Eigen values greater than 1.00. Then, the result of factor analysis on existing users who have used B2C car-sharing service reported their overall perception on utility towards car-sharing service listed in Table 4.

| **B2C Car-sharing Service Existing Users** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Items** | | **Components** | | | | | | | | | |
| **Factors** | **Scaled Items** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| SO3 | The more my friends around me start using car sharing service, the more I am willing to use car-sharing service. | .86 | | | | | | | | | |
| SO1 | The use of car sharing service allows me to be part of a group of like-minded people | .85 | | | | | | | | | |
| SO2 | Using car sharing service make me feel that I am hip and trendy. | .82 | | | | | | | | | |
| ANT1 | By sharing a car, I think I can avoid unnecessary marketing from automotive companies to promote consumption | | .78 | | | | | | | | |
| ANT4 | In peer to peer case, I think it is helpful to environment by consuming less resource because I share my car (idle resource) to whom need the time I don't need. | | .77 | | | | | | | | |
| ANT2 | With the use of car sharing service, I demonstrate environmental friendly consumption behavior. (Many of provided car is hybrid or electric car) | | .76 | | | | | | | | |
| ANT3 | I think owning a car is not necessary if we can access a car easily whenever we want | | .75 | | | | | | | | |
| TR1 | Car sharing service tends to be a good deal. | | | .89 | | | | | | | |
| TR2 | Car sharing service is reasonable service. | | | .82 | | | | | | | |
| TR3 | I believe that car sharing service knows about the needs of their customers | | | .80 | | | | | | | |
| STR1 | One great thing about car sharing service is not being responsible for parking a car myself because I don’t have to keep the car in my place | | | | .82 | | | | | | |
| STR3 | I like car sharing service because I can access a car without keeping it. | | | | .80 | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TCH2 | The internet and smartphone provide me quick and easy access to the service. | | | | | .90 | | | | | |
| TCH1 | The internet and smartphone is useful for consuming car-sharing service | | | | | .86 | | | | | |
| TCH3 | I like that Internet and smartphone enable me access the car without visiting the rental office physically. | | | | | .85 | | | | | |
| SUS4 | I think we can reduce unnecessary driving through car sharing service because we don't have to drive the only distance we need. | | | | | | .72 | | | | |
| SUS2 | I think owning a car is not necessary if we can access a car easily whenever we want. | | | | | | .60 | | | | |
| TRU3 | I trust that the service company will provide enough safeguards to protect to me from liability for damage so that I am not responsible for. | | | | | | | .65 | | | |
| TRU1 | I would use car sharing service because I trust that available cars will be displayed as expected. | | | | | | | .62 | | | |
| ECO1 | I believe that car sharing service save my money in many different aspects such as owing a car, parking a car, oil price, maintenance, insurance and picking up car. | | | | | | | | .81 | | |
| ECO2 | I like the fact that car sharing service because it saves my time: searching time for parking lots, driving unnecessary distance, picking up car. | | | | | | | | .66 | | |
| ECO3 | I like that I can drive many different type of cars without economic constraints. | | | | | | | | .65 | | |
| ECO4 | Even though I own my own car, I am likely to usecar sharing service to try different cars (as a second car). | | | | | | | | .64 | | |
| MO4 | I think car sharing service is more convenient than using my car | | | | | | | | | .65 | |
| MO3 | I think car sharing service is more convenient than taking a cab | | | | | | | | | .55 | |
| EMO3 | I think that car sharing service fits with my lifestyle. | | | | | | | | | | .74 |
| EMO2 | By using car sharing service I feel get away from routine life. | | | | | | | | | | .60 |

SO=Social Utility Mo=Mobility utility, STR=Storage Utility, SUS=Sustainability Utility, SO=Social Utility, ANT=Anti-Utility, TCH=Technology Utility, EMO=Emotional Utility, ECO=Economic Utility, TRU=Trust Utility

**Table 4. Component Matrix: Utility Dimension for Car-sharing Services (Existing Users for B2C Car-sharing Service)**

Regression analysis used to test the various hypothesis using factor scores. Table 2 displays the results of multiple regression analysis for the effect of ten categorized utility constructs on satisfaction and intention. Over, the result of ANOVA indicated that the models

were significant at the 0.01 level with F=13.664 (*r-square 0.698*). Based on these findings, all hypotheses (1b, 2b, 3b, 4b, 6b, 7b, 8b, 9b, 10b) are accepted except hypothesis 5b. In other words, higher perception on transaction, mobility, storage, sustainability, anti-industry, technology, economy, trust utility are stronger for satisfaction than social and emotional utility.

| **Variable (Independent -> Dependent)** | **Standardized Coefficient (t-value-Sig)** |
|---|---|
| Transaction Utility → Satisfaction of B2C Service (H1b) | 0.330 (4.524***) |
| Mobility Utility → Satisfaction of B2C Service (H2b) | 0.146 (2.019*) |
| Storage Utility → Satisfaction of B2C Service(H3b) | 0.222 (3.076**) |
| Sustainability Utility → Satisfaction of B2C Service (H4b) | 0.512 (7.105***) |
| Social Utility → Satisfaction of B2C Service (H5b) | 0.152(2.173) |
| Anti-Industry Utility → Satisfaction of B2C Service (H6b) | 0.136 (1.875*) |
| Technology Utility → Intention to use B2C Service (H7b) | 0.301(4.105***) |
| Emotional Utility → Satisfaction of B2C Service (H8b) | 0.113(1.577) |
| Economy Utility → Satisfaction of B2C Service (H9b) | 0.212(2.933**) |
| Trust Utility → Satisfaction of B2C Service (H10b) | 0.380 (5.201***) |

*** Significant at 0.01 level (2-tailed). ** Significant at 0.05 level (2-tailed). * Significant at 0.1 level (2-tailed).

**Table 5. The Summary of Effects of Utility on Satisfaction on B2C Car-sharing Services for Existing Users**

| **Variable (Independent -> Dependent)** | **Standardized Coefficient (t-value-Sig)** |
|---|---|
| Satisfaction → Loyalty of B2C Service (H12) | 0.816 (13.880***) |

*** Significant at 0.01 level (2-tailed). ** Significant at 0.05 level (2-tailed). * Significant at 0.1 level (2-tailed).

**Table 6. The Effects of Satisfaction to Loyalty for B2C Car-sharing Service for Existing Users**

This study conducted factor and regression analysis for perception on utility and satisfaction and the results are shown in Table 4. Overall, the results of the ANOVA find the models significant at the .01 level with F = 192.665 (r-square = .665). Based on these findings, hypotheses H12 were accepted.

With the same method, survey respondents who have used B2C car-sharing service reported their overall perception on utility towards car-sharing service and the result for factor analysis is summarized listed in Table 5.

| B2C Car-sharing Service Potential Users | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Items** | **Compontnes** | | | | | | | | | | |
| **Factors** | **Scaled Items** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| SO2 | Using car sharing service make me feel that I am hip and trendy. | 0.87 | | | | | | | | | |
| SO1 | The use of car sharing service allows me to be part of a group of like-minded people. | 0.85 | | | | | | | | | |
| SO3 | The more my friends around me start using car-sharing service, the more I am willing to use car sharing service. | 0.84 | | | | | | | | | |
| TCH1 | The internet and smartphone is useful for consuming car-sharing service. | | 0.85 | | | | | | | | |
| TCH2 | The internet and smartphone provide me quick and easy access to the service. | | 0.86 | | | | | | | | |
| TCH3 | I like that Internet and smartphone enable me access the car without visiting the rental office physically. | | 0.84 | | | | | | | | |
| TR2 | Car sharing service is reasonable service. | | | 0.81 | | | | | | | |
| TR3 | I believe that car-sharing service knows about the needs of their customers. | | | 0.8 | | | | | | | |
| TR1 | Car sharing service tends to be a good deal. | | | 0.81 | | | | | | | |
| ANT3 | By sharing a car, I think I can avoid unnecessary marketing from automotive companies to promote consumption. | | | | 0.98 | | | | | | |
| ANT2 | With the use of car sharing service, I demonstrate environmental friendly consumption behavior. (Many of provided car is hybrid or electric car) | | | | 0.79 | | | | | | |
| ANT1 | By sharing a car, I think I can avoid unnecessary marketing from automotive companies to promote consumption. | | | | 0.78 | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ANT4 | In peer-to-peer case, I think it is helpful to environment by consuming less resource because I share my car (idle resource) to whom need the time I don't need. | | | | 0.75 | | | | | | |
| STR1 | One great thing about car-sharing service is not being responsible for parking a car myself because I don't have to keep the car in my place. | | | | | 0.83 | | | | | |
| STR2 | I like that I don't have to waste my time for looking for parking place thanks to car-sharing's own pods. | | | | | 0.83 | | | | | |
| SUS2 | I thinks owning a car is not necessary if we can access a car easily whenever we want. | | | | | | 0.82 | | | | |
| SUS3 | Sharing car is just as good as owns one. | | | | | | 0.83 | | | | |
| SUS4 | I think we can reduce unnecessary driving through car sharing service because we don't have to drive the only distance we need. | | | | | | 0.78 | | | | |
| SUS1 | I believe a shared car substitutes quiets well for a personally owned car. | | | | | | 0.72 | | | | |
| ECO1 | I believe that car-sharing service save my money in many different aspects such as owing a car, parking a car, oil price, maintenance, insurance and picking up car. | | | | | | | 0.82 | | | |
| ECO4 | Even though I own my own car, I am likely to use car-sharing service to try different cars (as a second car). | | | | | | | 0.81 | | | |
| ECO3 | I like that I can drive many different type of cars without economic constraints. | | | | | | | 0.67 | | | |
| ECO2 | I like the fact that car-sharing service because it saves my time: searching time for parking lots, driving unnecessary distance, picking up car. | | | | | | | 0.64 | | | |
| EMO2 | By using car-sharing service I feel get away from routine life. | | | | | | | | 0.73 | | |
| EMO3 | I think that car-sharing service fits with my lifestyle. | | | | | | | | 0.64 | | |
| EMO1 | I would feel fun when I use car sharing service. | | | | | | | | 0.57 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TRU2 | I will be happy that users of car sharing service are truthful in dealing with one another. | | | | | | | | | 0.74 | |
| TRU3 | I trust that the service company will provide enough safeguards to protect to me from liability for damage so that I am not responsible for. | | | | | | | | | 0.69 | |
| TRU4 | A considerable amount of useful feedback and reviews in usage history about car-sharing service by different user is important to me. | | | | | | | | | 0.64 | |
| MO5 | I think car-sharing service provides convenience when traveling short distance during short time. | | | | | | | | | | 0.72 |
| MO1 | Car-sharing service give me more freedom of mobility. | | | | | | | | | | 0.68 |

SO=Social Utility Mo=Mobility utility, STR=Storage Utility, SUS=Sustainability Utility, SO=Social Utility, ANT=Anti-Utility, TCH=Technology Utility, EMO=Emotional Utility, ECO=Economic Utility, TRU=Trust Utility

**Table 7. Component Matrix: Utility Dimension for Car-sharing Services (Potential Users for B2C Car-sharing Services)**

Regression analysis used to test the various hypothesis using factor scores. Table 2 displays the results of multiple regression analysis for the effect of ten categorized utility constructs on satisfaction and intention. Over, the result of ANOVA indicated that the models were significant at the 0.01 level with F=19.064 (r-square 0.542). Based on these findings, all hypotheses (1a, 2a, 3a, 4a, 6a, 7a, 8a, 9a) were found to have a significant and positive effect on intention to use B2C car-sharing service variable. However, no significant relationship was found between trust (10a) and the intention to use B2C car-sharing service.

| **Variable (Independent → Dependent)** | **Standardized Coefficient (t-value-Sig)** |
|---|---|
| Transaction Utility -> Intention to use B2C Service (H1a) | 0.277 (4.981***) |
| Mobility Utility -> Intention to use B2C Service (H2b) | 0.109 (1.953**) |
| Storage Utility -> Intention to use B2C Service (H3b) | 0.156 (2.804**) |
| Anti-Industry Utility -> Intention to use B2C Service (H4b) | 0.259 (4.652***) |
| Social Utility -> Intention to use B2C Service (H5b) | 0.312 (5.628***) |
| Sustainability Utility -> Intention to use B2C Service (H6b) | 0.170 (3.066**) |
| Technology Utility -> Intention to use B2C Service (H7b) | 0.163 (2.938**) |
| Emotional Utility-> Intention to use B2C Service (H8b) | 0.412 (7.410***) |

| | |
|---|---|
| Economic Utility -> Intention to use B2C Service (H9b) | 0.150 (2.708**) |
| Trust Utility -> Intention to use B2C Service (H10b) | 0.103 (0.1953) |

*** Significant at 0.01 level (2-tailed). ** Significant at 0.05 level (2-tailed). * Significant at 0.1 level (2-tailed).

**Table 8. The Summary of Effects of Utility on Expected Satisfaction on B2C Car-sharing Services for Potential Users**

This study conducted factor and regression analysis for perception on utility and satisfaction and the results are shown in Table 4. Overall, the results of the ANOVA find the models significant at the .01 level with F = 342.963 (r-square = 0.590). Based on these findings, hypotheses H11 were accepted.

| **Variable (Independent → Dependent)** | **Standardized Coefficient (t-value-Sig)** |
|---|---|
| Intention → Expected Satisfaction of B2C Service (H11) | 0.768 (18.519***) |

*** Significant at 0.01 level (2-tailed). ** Significant at 0.05 level (2-tailed). * Significant at 0.1 level (2-tailed).

**Table 9. The Effects of Intention to Use on Expected Satisfaction for B2C Car-sharing Services for Potential Users**

### 6.2.2. Study 2: Peer-to-Peer Car Sharing Service

The results of study 2 presents peer-to-peer car sharing service whom are willing to rent a car from another peer (table 9-11) and whom are willing to share their own car to other peers (table 10-13). Indeed, results between the potential user who are intent to rent a car and who are intent to share their own car show many similarities but difference between storage utility. However, it shows difference results from Study 1 who are existing users and potential users in B2C car-sharing service.

| **P2P Car-sharing Service** | | |
|---|---|---|
| **Variable** | **Specification** | **Potential User (N=403)** |
| Gender | Male | 47.3% |
| | Female | 52.7% |
| Married | Married | 38.4% |
| | Unmarried | 61.6% |
| Age | Under 20 | 0.09% |

| | | |
|---|---|---|
| | 21-25 | 32.1% |
| | 26-30 | 38.7% |
| | 31-35 | 14.1% |
| | 36 and older | 10.83% |
| Education | Under high school | 2.4% |
| | Associate-college enrolled | 2.4% |
| | Associate-college graduated | 4.8% |
| | Four-year-university enrolled | 27.4% |
| | Four-year-university graduated | 47.3% |
| | Master degree or more | 15.7% |
| Occupation | Student | 49.7% |
| | Employed | 33.0% |
| | Self-employed | 3.3% |
| | Public servant | 3.3% |
| | Housewife | 1.8% |
| | etc. | 8.8% |
| Region | Seoul | 55.9% |
| | Gyeong-gi | 25.2 % |
| | Chung-cheong | 11.2% |
| | Gyeong-sang | 6.1% |
| | Junl-la | 1.5% |
| | Jeju | - |

**Table 10. Sample Chracterstics of Study2: P2P Car-sharing Service**

Same with previous study 1, study 2 also uses principal component analyses as the extraction method and Varimax rotation methods with Kaiser Normalization. The results of factors analyses show that items represent major variables, such as ten major categorized utilities, with Eigen values over 1.00. The result for factor analysis of perceived utility on P2P users is displayed in Table 10.

| **P2P Car-sharing Service Potential Users (Who are willing to rent a car from peer)** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Items** | | **Components** | | | | | | | | | |
| **Factors** | **Scaled Items** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| SO6 | I think it is good opportunity to know new people through peer to peer car sharing service. | .88 | | | | | | | | | |
| SO5 | In case of peer to peer car sharing service, I would enjoy social interaction with new people by renting a car from individual.it would be funs that socially mingle with the car owner when rent a car. | .85 | | | | | | | | | |
| SO4 | In case of peer to peer car sharing service, it would be funs that socially mingle with the car owner | .85 | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | when rent a car. | | | | | | | | | | |
| SO7 | If the car owner's profile is interesting, I am more likely to try peer to peer car sharing service to hi m or her. | .77 | | | | | | | | | |
| SO3 | The more my friends around me start using car-sharing service, the more I am willing to use car-sharing service. | .59 | | | | | | | | | |
| SO1 | The use of car sharing service allows me to be par t of a group of like-minded people. | .52 | | | | | | | | | |
| TCH2 | The internet and smartphone provide me quick an d easy access to the service. | .50 | | | | | | | | | |
| TCH1 | The internet and smartphone is useful for consum ing car-sharing service. | | .88 | | | | | | | | |
| TCH3 | I like that Internet and smartphone enable me acc ess the car without visiting the rental office physi cally. | | .81 | | | | | | | | |
| | With the use of car sharing service, I demonstrate environmental friendly consumption behavior. ( Many of provided car is hybrid or electric car) | | | .80 | | | | | | | |
| ANT1 | By sharing a car, I think I can avoid unnecessary marketing from automotive companies to promot e consumption. | | | .77 | | | | | | | |
| ANT3 | I think I can contribute to the improvement of urb an environmental pollution by driving the only ti me I need. (Reducing driving unnecessary distanc e) | | | .77 | | | | | | | |
| ANT4 | In peer to peer case, I think it is helpful to environ ment by consuming less resource because I share my car (idle resource) to whom need the time I do n't need. | | | .70 | | | | | | | |
| TR2 | Car sharing service is reasonable service. | | | | .84 | | | | | | |
| TR1 | Car sharing service tends to be a good deal. | | | | .83 | | | | | | |
| TR3 | I believe that car sharing service knows about the needs of their customers. | | | | .83 | | | | | | |
| SUS2 | I think owning a car is not necessary if we can ac cess a car easily whenever we want. | | | | | .83 | | | | | |
| SUS3 | Sharing car is just as good as owns one. | | | | | .78 | | | | | |
| SUS4 | I think we can reduce unnecessary driving throug h car sharing service because we don't have to dri ve the only distance we need. | | | | | .68 | | | | | |
| SUS1 | I believe a shared car substitutes quiets well for a personally owned car. | | | | | .67 | | | | | |
| ECO5 | In case of P2P car sharing service, I like the fact t hat I can earn some profits by renting my car to ot hers when I don't use | | | | | | .72 | | | | |
| ECO6 | In P2P car sharing case, I like the fact that I can g et some monetary benefits by utilizing dormant re source in idle time. | | | | | | .70 | | | | |
| ECO4 | Even though I own my own car, I am likely to use car sharing service to try different cars (as a seco nd car). | | | | | | .61 | | | | |
| STR2 | I like that I don't have to waste my time for looki ng for parking place thanks to car sharing's own pods. | | | | | | | .78 | | | |
| STR1 | One great thing about car sharing service is not b eing responsible for parking a car myself because I don't have to keep the car in my place. | | | | | | | .74 | | | |
| STR3 | I like car sharing service because I can access a c | | | | | | | .65 | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ar without keeping it. | | | | | | | | | | |
| EMO2 | I like the fact that car sharing service because it s aves my time: searching time for parking lots, dri ving unnecessary distance, picking up car. | | | | | | | | .70 | | |
| EMO1 | I believe that car sharing service save my money i n many different aspects such as owing a car, par king a car, oil price, maintenance, insurance and picking up car. | | | | | | | | .67 | | |
| EMO3 | I like that I can drive many different type of cars without economic constraints. | | | | | | | | .60 | | |
| TRU3 | I trust that the service company will provide enou gh safeguards to protect to me from liability for d amage so that I am not responsible for. | | | | | | | | | .67 | |
| TRU2 | I will be happy that users of car sharing service ar e truthful in dealing with one another. | | | | | | | | | .43 | |
| MO3 | I think car sharing service is more convenient tha n taking a cab. | | | | | | | | | | .68 |
| MO5 | I think car sharing service provides convenience when traveling short distance during short time. | | | | | | | | | | .65 |
| MO4 | I think car sharing service is more convenient tha n using my car. | | | | | | | | | | 60 |

SO=Social Utility Mo=Mobility utility, STR=Storage Utility, SUS=Sustainability Utility, SO=Social Utility, ANT=Anti-Utility, TCH=Technology Utility, EMO=Emotional Utility, ECO=Economic Utility, TRU=Trust Utility

**Table 11. Component Matrix: Utility Dimension for Car-sharing Services (Potential Users for B2C Car-sharing Service)**

The study also applies regression analyses, the analyses of variance (ANOVA). Results of the results of regression analyses for the effects of variable to the depend variable based on table 9. Over, the result of ANOVA indicated that the models were significant at the 0.01 level with F=17.212 (r-square 0.452). Based on these findings, hypotheses 4a, 5a, 6a, 9a are accepted and hypotheses 1a, 2a, 7a, and 10a are not accepted. In other words, higher perception on anti-industry, sustainability, technology, emotional, economy utility are stronger for satisfaction than transaction, mobility, storage, z technology, trust utility.

| **Variable (Independent → Dependent)** | **Standardized Coefficient (t-value-Sig)** |
|---|---|
| Transaction Utility → Intention of using P2P Service [rent a car] (H1a) | 0.040(.771) |
| Mobility Utility → Intention of using P2P Service [rent a car] (H2a) | 0.047 (0.910) |
| Storage Utility → Intention of using P2P Service [rent a car] (H3a) | -0.005 (-.039) |
| Anti-Industry Utility → Intention of using P2P Service [rent a car] (H4a) | 0.229 (4.448***) |
| Social Utility → Intention of using P2P Service [rent a car] (H5a) | 0.455(8.866***) |
| Sustainability Utility → Intention of using P2P Service [rent a car] (H6a) | 0.155 (3.014**) |

| | |
|---|---|
| | |
| Technology Utility → Intention of using P2P Service [rent a car] (H7a) | 0.054 (1.050) |
| Emotional Utility → Intention of using P2P Service [rent a car] (H8a) | 0.230 (4.535*) |
| Economic Utility →- Intention of using P2P Service [rent a car] (H9a) | 0.359 (6.997***) |
| Trust Utility → Intention of using P2P Service [rent a car] (H10a) | 0.081 (1.566) |

*** Significant at 0.01 level (2-tailed). ** Significant at 0.05 level (2-tailed). * Significant at 0.1 level (2-tailed).

**Table 12. The Summary of Effects of Utility on Intention of Using P2P Car-sharing Service**

**[Who are willing to rent a car from peer]**

The study2 conducted factor and regression analysis for intention to use the service who are willing to rent a car from pees in Table 11. Overall, the results of the ANOVA find the models significant at the .01 level with F = 593.343 (*r-square* = 0.820). Based on these findings, hypotheses H11 are accepted which means expected satisfaction to intention to potential users who rent a car from peers was significant.

| **Variable (Independent → Dependent)** | **Standardized Coefficient (t-value-Sig)** |
|---|---|
| Intention -> Expected Satisfaction of using P2P Service [rent a car] (H11) | 0.820 (24.359***) |

*** Significant at 0.01 level (2-tailed). ** Significant at 0.05 level (2-tailed). * Significant at 0.1 level (2-tailed).

**Table 13. The Effects of Intention to Use the Service on Expected Satisfaction ofUsing P2P Car-sharing Services**

**[Who are willing to rent a car from peer]**

This study also examined the effects of overall perceived utilities to willingness to share my own car. The results of regression analyses are shown in Table 12. Overall, the results of the ANOVA find the models significant at the 01 level with F = 23.220 (*r-square = .0.526*). Therefore, hypotheses 3a, 4a, 5a, 6a, 8a, 9a were accepted. In other words, higher levels of utilities and were associated with higher levels of willingness to sharing their own car.

| Variable (Independent → Dependent) | Standardized Coefficient (t-value-Sig) |
|---|---|
| Transaction Utility → Intention of using P2P Service [share my car] (H1a) | 0.029 (.604) |
| Mobility Utility → Intention of using P2P Service [share my car] (H2a) | 0.000 (-0.006) |
| Storage Utility → Intention of using P2P Service [share my car] (H3a) | 0.131 (2.751**) |
| Anti-Industry Utility → Intention of using P2P Service [share my car] (H4a) | 0.229 (4.448***) |
| Social Utility → Intention of using P2P Service [share my car] (H5a) | .455 (8.866***) |
| Sustainability Utility → Intention of using P2P Service [share my car] (H6a) | 0.155 (3.014**) |
| Technology Utility → Intention of using P2P Service [share my car] (H7a) | 0.054 (1.050) |
| Emotional Utility → Intention of using P2P Service [rent a car] (H8a) | 0.033 (8.866***) |
| Economic Utility -> Intention of using P2P Service [share my car] (H9a) | 0.359 (6.992***) |
| Trust Utility -> Intention of using P2P Service [share my car] (H10a) | 0.047 (0.910) |

*** Significant at 0.01 level (2-tailed). ** Significant at 0.05 level (2-tailed). * Significant at 0.1 level (2-tailed).

**Table 14. The Summary of Effects of Utility on Intention of Using P2P Car-sharing Service [who willing to share my own car to peer]**

The study also measured the effects of willingness to share their own car and expected satisfaction of P2P car sharing services. The results of regression analyses are shown in Table 13. Overall, the results of the ANOVA find the models significant at the 01 level with F = 1220.067 (*r-square = .0.790*).

| Variable (Independent → Dependent) | Standardized Coefficient (t-value-Sig) |
|---|---|
| Intention -> Expected Satisfaction of using P2P Service [share a car] (H12) | 0.889 (34.929***) |

*** Significant at 0.01 level (2-tailed). ** Significant at 0.05 level (2-tailed). * Significant at 0.1 level (2-tailed).

**Table 15. The Effects of Intention to Use the Service on Expected Satisfaction of Using P2P Car-sharing Service [Who are willing to share my own car to peer]**

In conclusion, the result of hypothesis testing of ten main perceived utilities toward each attitude summarized in table 15.

| | B2C Car-Sharing Economy | | P2P Car-Sharing Economy | |
|---|---|---|---|---|
| Types of Utility | **Existing Users** Satisfaction | **Potential Users** willing to use B2C Service | **Potential users (car-renter)** willing to rent peer's car | **Potential users (car-owner)** willing to share my car |
| **Transaction (H1)** | accepted | accepted | not accepted | not accepted |
| **Mobility (H2)** | accepted | accepted | not accepted | not accepted |
| **Storage (H3)** | accepted | accepted | not accepted | accepted |
| **Anti-Industry (H4)** | accepted | accepted | accepted | accepted |
| **Social (H5)** | not accepted | accepted | accepted | accepted |
| **Sustainability (H6)** | accepted | accepted | accepted | accepted |
| **Technology (H7)** | accepted | accepted | not accepted | not accepted |
| **Emotional (H8)** | not accepted | accepted | accepted | accepted |
| **Economic (H9)** | accepted | accepted | accepted | accepted |
| **Trust (H10)** | accepted | not accepted | not accepted | not accepted |

**Table 16. The Summary of Effects of Utility on Satisfaction and Intention to B2C and P2P Services**

Lastly, the result of hypothesis testing from the impact of intention to use on expected satisfaction, and the impact of satisfaction on customer's loyalty.

| Type of Service | Group | Hypothesis Testing | Result |
|---|---|---|---|
| B2C Car-sharing Service | Existing Users | Satisfaction → Loyalty of B2C Service (H12) | Accepted |
| | Potential Users | Intention → Expected Satisfaction of B2C Service (H11) | Accepted |
| P2P Car-sharing Service | Potential Users (Who are willing to rent a car from peer) | Intention → Expected Satisfaction of P2P Service (H11) | Accepted |
| | Potential Users (Who are willing to share my car to peer) | Intention → Expected Satisfaction of P2P Service (H11) | Accepted |

**Table 17. The Summary of Effects of Satisfaction on Loyalty and Intention to Use on Expected Satisfaction in B2C and P2P Services**

## Conclusion

*Summary of the Results*

The present research first examines both existing and potential users of the B2C car sharing service (study 1). It also analyzes potential users of the P2P car sharing service (study 2), which is currently prohibited by law at the location where the study is conducted. In the case of the existing users of the B2C car sharing service, this study measures the effects of the level of utility vis-a-vis levels of satisfaction and loyalty; meanwhile, in the case of the potential users of the B2C and P2P car-sharing services, the study addresses the effects of their intentions and levels of satisfaction.

First, the results of this study find that the effects of various types of utilities are different among the potential and existing B2C car-sharing users in study 1. This study pinpoints that the existing users differ from potential users of the B2C car-sharing service in ways that the social and emotional utilities affect their levels of satisfaction. The potential users who may use the B2C car-sharing service in the future reveal a significant relationship among the emotional and social utilities with the intention to use the B2C car-sharing services, while the existing B2C car-sharing service users are not in favor of emotional and social utilities. Emotional and social utilities are the main attributes of participating in collaborative consumption (Rachel and Rogers, 2010).

Second, in study 1, while the economic and trust utilities are insignificant to the potential B2C car-sharing service, including those two utilities, the effects of the transaction, mobility, sustainability, and technology utility are significant among the B2C car-sharing service users in terms of satisfaction levels. An array of utilities that is significant for B2C car-sharing users

show the propensity for access-based consumption (Bardhi and Eckhardt, 2012), among car-sharing users are motivated by self-utilitarianism that is similar to a market exchange system and they resist any engagement in the system of objects beyond user value. Bardhi and Eckhardt (2012) argued that this trend weakens the brand community, in other words, "consumers resist co-creation efforts from the company to engage in the community building or identity connection that goes beyond market exchange" (Zwick, Bonsu and Darmody, 2008). Already again the anecdote suggests that sharing systems appeals to customers because it can access a desired product at a lower cost (Sacks, 2011)

Third, in terms of the P2P car-sharing service, the study 2 results examine that there are variances in intentions to use the service among the samples, including the people who are willing to share their own cars and the people who are willing to rent a car from other peers. Among ten categorized utilities, several common utilities are identified as significant in both sides including the mobile utility, storage utility, anti-industrial utility, sustainability utility, and economic utility. The person, however, who is willing to share their cars has more significant utilities which affect the intention to use the service, particularly regarding the storage utility. The study implies that the person who is willing to share their car might be more likely satisfied with the P2P car-sharing service because they can mitigate concern and cost of parking a car when they are not using it.

Fourth, the results of study 1 and 2 also reveal that the utility for the intentions shows differences depending on the types of services provided. This study finds that effects of the sustainability utility are significant in all groups of users toward their level of satisfaction and intention to services. In both study 1 and 2, existing users and potential users of the B2C and P2P car-sharing service are favorable toward sustainability utility.

Fifth, this study also proves transaction, mobility, sustainability, technology utility effects the levels of satisfaction are significant among the existing and potential B2C user groups, while those effects are insignificant for the P2P potential users. This implies that the B2C car-sharing service recognizes those utilities through user experiences, while its potential users are less likely to be aware of the service. According to Lamberton and Rose's (2012) research, the levels of familiarity with sharing behavior are highly related to the propensity of sharing. In their research, lacking knowledge to the service drive users is less likely to use the sharing service. Therefore, according to the research, in the P2P car-sharing case, to raise service awareness, promoting the knowledge of the new service and providing the opportunity to reach the service are important.

Lastly, the study finds that the trust utility is only significant for B2C existing users while it is insignificant for residual-potential user groups. It implies that the experiences of service make users feel secure, at the same time potential users are hesitant to use the both B2C and P2P car-sharing service in terms of trust utility but before using the service. According to Coase's (1960) study, the overall attractiveness of sharing depends on a consumer's perception of costs and benefits of sharing behavior as well as that of the perception of other consumers. In Lamberton and Rose (2012) typology of sharing systems, car-sharing system is classified as "open commercial goods sharing". It is that virtually any one can gain access to the shared goods, but not guaranteed availability depends on fulfillment of terms such as previous user consumption behavior or on a serviceable condition.

*Managerial Implications*

For B2C and P2P managers sharing economy services, particularly in the case of a car sharing service, this paper offers important insights highly relevant to the levels of consumers'

utilities that affect their intention, and levels of satisfaction and loyalty to what in sharing economy services. This work identifies several managerially observable and readily controllable factors that can be applied to analyze a user's level of utilities and intention, satisfaction and consumer's retention to the car-sharing economy. First, Study 1 presents different significant factors between actual and potential users of the B2C car-sharing service. In contrast to most B2C car-sharing advertisements, highlighting the user's image seems to be associated with emotional and social utility (i.e. travelling or camping with friends or young couple's dating), while actual users find satisfaction from utilities related to accessibility–the mobility, storage, and transaction—and from monetary benefits–the anti-industrial and economic utility. Since car sharing is still a new service, promoting the comprehensive image of the service might be appealing to potential users. As the survey results confirm, potential users seem to recognize the social and emotional utilities related to collaborative consumption. Those advertisements have worked successfully to attract consumer accessibility which is trendy and cool, conversely to a perception of traditional rental service, and this finding is coherent with Moller and Wittkowski's previous study (2010).

This study suggests companies providing car-sharing services should also feature other functional utilities that directly benefit consumers in order to increase awareness levels of diverse utilities from using the car-sharing services. As the previous study reveals, the knowledge related to car sharing service has a positive impact on people's intention to use the service. To maximize people's intention to try the service, considering a balance between two approaches of marketing is recommended to managers.

Moreover, the results of the study suggest that experienced users trust the service. The experienced users show a high trust level not only with the service, but also with the

communities of the car-sharing peers. However, the potential users lack in such confidence even though the companies advertise and inform about the service. As the studies conducted by Lamberton and Rose revealed, consumers are prone to recognize unfamiliarity as a cost and a risk, and thus they are less likely to use the service (2012). In the sharing economy, as it is still at the initial stage, this trust issue can be recognized as a risk, and can be an obstacle to raise the intention to use the service; however, once people familiarize themselves with the service, they start having trust in the service in general. Therefore, managers must explicitly consider this trust issue, and decide how they should promote the service in the future.

Third, this study shows evidence to those consumers who are willing to use and are satisfied with the service, value the sustainability utility, which is also related to the anti- industry utility. Therefore, companies should consistently emphasize environmental-friendly agenda to customers. There seems to be clear evidence supporting that car sharing service promotes environmental sustainability. According to the TCRP report, the car-sharing service is effective in reducing 40% of unnecessary driving distance, and 957 tons of Carbon Dioxide per year (2010). This finding might be helpful to not only sharing economy startups, but also to existing enterprises.

Further, as Matzler, Veider, & Kathan (2014) classified, in the sharing economy, of potential strategies that not only particular startups, but also traditional companies can use to promote goods and services. Such strategies include informing consumers about the advantages of the value position in the realm of collaborative consumption. In addition, Porter and Karmer (2006; 2011) suggest a narrow focus on reconceiving new products and services to create demand by designing products in new markets; this would be beneficial to both the company and society, including those with emerging economies. Therefore, this research suggests that conventional-

non-sharing-service-industrial managers can apply these findings to gain insights into the sharing economy's emerging trend (Botsman & Rochers, 2012; Belk, 2014), by incorporating sharing services in their product cases, which present social value as environmentally-friendly consumption and sustainable development. Already, the automobile industry, car-manufacturers and the traditional rental car company have expanded their offerings. For instance, Daimler group launched a P2P car-sharing service named car2go, positioning themselves as consuming less natural resources and reducing the number of driving cars and land consumption by parking. BMW has additionally started a service called DriveNow, providing the only BMW-electric-car series for providing premium mobility with reducing greenhouse gas emissions at the same time. Avis Group has finally expanded its service portfolio by acquiring car-sharing companies, while Zipcar and Hertz have started to offer their own car-sharing service named Connect.

In terms of trust, the finding can play an important role in not only sharing-economy-service startups, but also companies in traditional companies strategically. First, in the aspect of sharing economy service providers, since trust is rated to the satisfaction once they have experienced the service. It order to increase trust level in relation to service, it is necessary for potential users to take part in the service, for example a trial ride. Recently, Toyota's Prius, held their promotional even by collaborating car-sharing service, and it was mutually successful. Toyota can increase the Prius's brand recognition and corporate brand image as an innovative and environmentally-conscious company. Also, the trial riders have an opportunity to learn about the car-sharing service system, and this trial experience can be linked to the likelihood to choose the car-sharing option in the future. The conventional non-sharing company can also take advantage of these trust implications. Particularly, as the peer-to-peer sharing system is controversial for a number of issues including safety, economic issues, and conflicts between the

peer-to-peer sharing service providers and conventional industry. However, the traditional companies differentiate themselves from the sharing company, by emphasizing their service assurance to receive the same quality of service for noted prices, and controllable and manageable for any problems alternatively in contingency cases.

*Policy Implications*

One major factor to drive sharing economy growth are scarce resources which means first, a scarcity or raw materials following energy prices and growth of demand for efficiency, second, lacking space to sustainably expand their traffic infrastructure, and third, lack of budget to invest in new and expensive infrastructure after the financial crisis. In order to deal with these problems, the sharing economy might be a good alternative for the government, because it creates new business opportunities and drives sustainable growth. Currently, many local governments tend to support these sharing economy service providers. For instance, Zipcar offered free parking places (pods) for the city's sustainable transportation and sustainable development. In Korea, the Seoul city, the local authorities advertise sharing economy and sharing economy company's products and service as a public campaign advertisement to increase the sharing economy system's awareness.

As trust reveals duplex results among the satisfaction levels in existing users and the intention to use car-sharing services to potential user groups toward their attitudes, it is evident that trust is an important value for people to try the service. Not only trust to service, but also general social trust is important when it comes to people's collaboration. Especially, the trust issue among potential users is more likely to relate in trust in general people, trust in anonymous peers' practices to maintain integrity. In the World Value Survey (2013), Korea's general trust

score was 56.9, and the score of "I can trust general people" question decreased from 36.00(1982) to 27.60 (2001). Many countries in which the sharing economy is popular and prevalent, the scores of general trust that were top ranked included Sweden (134.5) and the United States (75.8), one of the sharing economy's pioneer countries. In addition, in Choi (2006) research, Korea's level of general trust has been summarized as "scarcity of law-abidance", "paucity of fair competition", and "self-interest maximization even by sacrificing others". To increase the trust level, institutions should foster fair competition and transparency in society and cultivate trust as social capital.

*Theoretical Contributions*

Even though the sharing economy is booming, academia has so far provided no empirically sound framework for studying intentions, and particularly levels of satisfaction and loyalty to the shared products and services. This study advances academic knowledge in several ways. Most importantly, the study is the first to examine all three types of attitudes—intention to use, and levels of satisfaction and loyalty—at the same time the same industry of sharing economy service. The study also identifies the types of utilities affecting attitudes. Most prior researches' focal point has been to figure out the intention to choose and the likelihood of choosing the service again, and to collect samples from a single type of service or two different types of industry, separately.

In addition, concerning the sharing economy's two main academic approaches, those are 'collaborative consumption' and 'access-based consumption', the implications of this research can draw the conclusion that many factors identified in the combination of both approaches and various types of business and consumer's behavior by existing users and potential users.

Moreover, this research can be traced back to classical theories as introduced in the literature review of this paper, which is "the Tragedy of Commons (Hardin, 1968), the Game Theory's Prisoner's Dilemma (Rapport and Chammah, 1970) and "the Logic of Collective Action (Oslson, 1965) that prevalent view of 'rational-human being' and 'Governing the Commons (Ostrom, 1970), as the successful examples of collaborative consumption".

*Limitations and Opportunities*

Finally, there are limitations of this study that need to be discussed. First, the place where the study was surveyed is still at the initial stage in car-sharing service. Thus, there is a dearth of knowledge related to car-sharing service. It would be manageable if the car-sharing service becomes more developed and people become familiar with the service, the perceived utility would be more diverse, and risk related with it also might be more manageable. Second, the sample size of users and non-users was insufficient to analyze the circumstance. Third, this study has not fully explored all possible factors of utility affecting people's intention to use the car-sharing service and satisfaction and loyalty. Fourth, these research parameters were limited to car-sharing service, and didn't investigate other types or sharing services. Further research should address additional cases of the industries of sharing economy service to globally verify the results gained in this paper and to strengthen cross-sector validity. In sum, future research on the sharing economy should be conducted to illuminate this emerging trend that is remarkably changing consumer behavior.

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**Questionnaire:**
**Exploring Factors of Satisfaction Applied in Sharing Economy Model**
**(In case of car sharing)**

Please take 20 minutes to answer the following questions. Your responses to this survey are strictly confidential and will not be revealed to anyone other than researchers. Participation in this survey must be voluntary. All data will also be kept anonymously. The intent of this work is academic research purposes only. No individual or organization will be identified in any analyses or reports connected to the survey data. Samples will be selected from the age group of 20-65. The researchers welcome any questions or comments concerning this survey or the research project. Your contribution is very important to provide better service of car-sharing service sector increase intention to use and customer satisfaction. Thank you!

Adviser: Professor. Yoon Choeng, CHO
Researcher: Sunme, LEE
email: sunme2009@gmail.com

**Part 1: Experience in B2C Car Sharing Service**
**Please answer the following questions based on your experiences from B2C car sharing service (e.g. SoCar, GreenCar, SoCar).**

1. Have you ever heard any services from sharing economy? (e.g. sharing car(GreenCar, SoCar), sharing accommodation(Airbnb) ……..…… (  ) Yes (  ) No
2. Have you used sharing economy service?.....(  ) Yes (  ) No
   2-1. What kind of sharing economy service have you used? (please answer whom checked yes in question 2, multiple choices)
   (  ) car sharing (SoCar, GreenCar) (  )bike sharing (hankang bike, fifteen)
   (  ) accommodation sharing (air bnb, kojaja) (  ) goods sharing (열린옷장, 빌리지)
   (  ) experience sharing (  ) knowedge sharing (slideshare)
   (  ) crowd-funding (  ) etc.

3. Have you ever heard abut car-sharing service? (e.g. Zipcar, Socar).....(  ) Yes (  ) No

4. Have you ever used car-sharing Service? (on-line car-sharing service hourly by online website or mobile application without visiting rental office)……(  ) Yes (  ) No

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**Part II. In case of B2C (Business to Consumer) Car Sharing Service**

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B2C Car sharing is most comon type of car sharing service. The most popular case is in Zip Car and it is popular in North America and Europe recently. In these days, it becomes popular in Korea and the most representative of brand is SoCar and Green car. This is for an hourly-basis (starting from less than $1 per 10 minute) car rental service reserving car by online website or mobile application, you **don't have to go** car-rental office physically. Once you join the membership by registering your driver license and the credit card in advance, the payment automatically made via mobile application automatically when you return the car. The rate is only calculated based on the basic rental fee and distance you drive; you **don't have to pay** insurance fee and oil price.

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**How to Use SoCar (Business to Consumer Car-sharing service)**

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## 다른 교통 수단과 차이점

대중교통 vs


**더 편리한 연결성**

대중교통으로 갈 수 없는 곳까지 이동 가능

기존 렌터카 vs

**직접 방문 필요 없음**

**단기대여:시간제**

하루단위X.10분단위

**반납 전 연료 충전 의무 X**

택시 vs


**사생활 보호**

자가용처럼 자유롭게 운전

자가용 vs

**필요한 때만**

아침부터 차를 가지고 나오지 않아도 '필요한 주행거리'와 '구간'만 운전 가능

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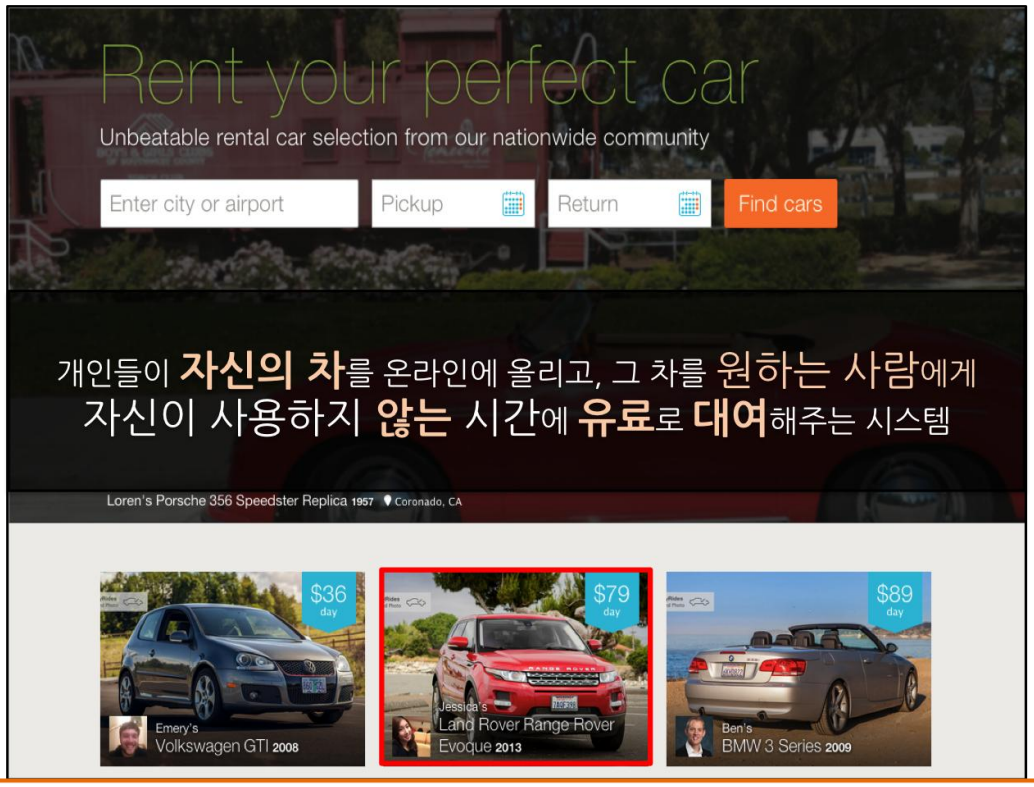
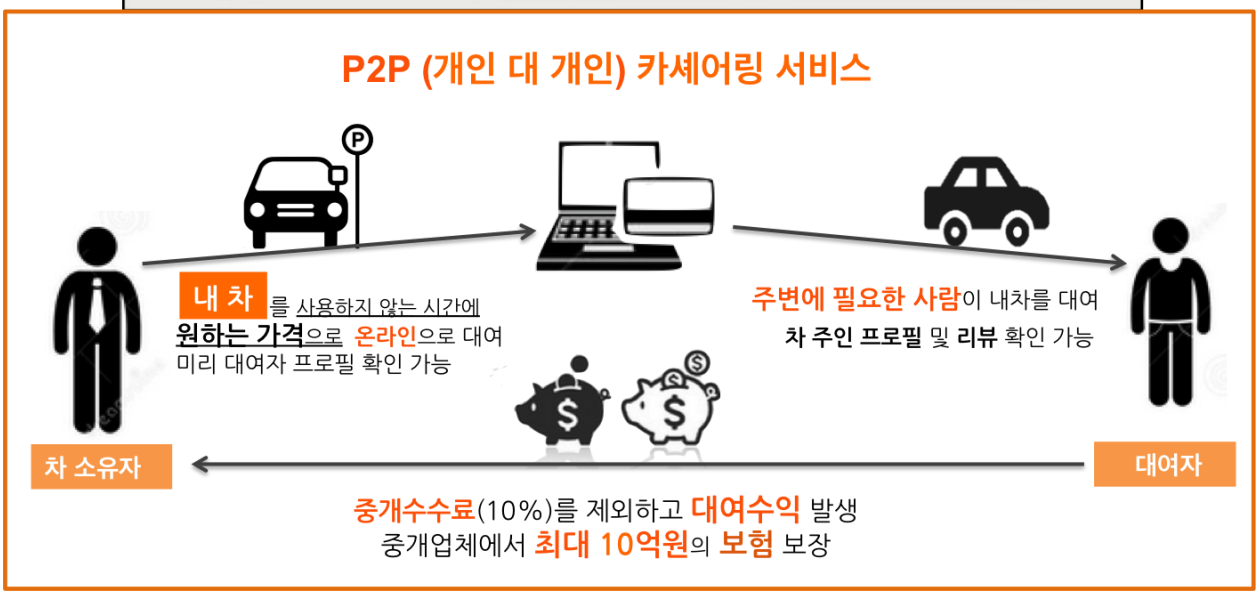
**2. In case of P2P (Peer to Peer) Car Sharing Service**

P2P car-sharing service is renting 'your car' to another person whom needs a car when you don't use the car and get some profits, and get some profits in return. Currently, it is not yet in operation in Korea, but is very popular in the North America and Europe as an advanced sharing economy business model from B2C car sharing service. (e.g. RelayRides, Buzzcar)



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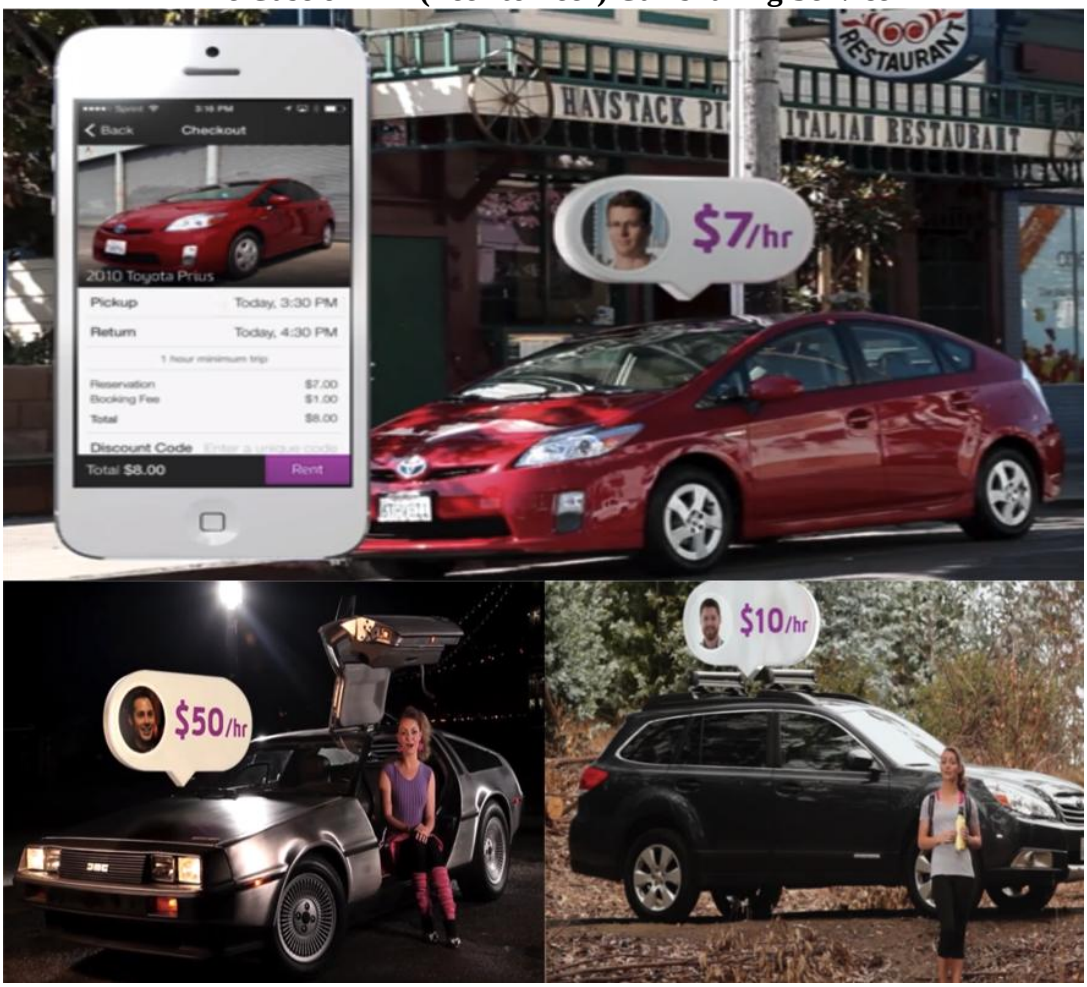
**The Case of P2P (Peer to Peer) Car-sharing Service**




## Part 2. Utility Estimation

**Please answer the following questions based on your <u>car-sharing service.</u>**

| **1. Transaction Utility** | | Strongly Disagree | | | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| a. | Car sharing service tends to be a good deal. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | Car sharing service is reasonable service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I believe that car-sharing service knows about the needs of their customers. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| **2. Mobility Utility** | | Strongly Disagree | | | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| a. | Car-sharing service give me more freedom of mobility. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | I would like to use car-sharing service, if I want to go somewhere close but not connected by public transportation. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I think car-sharing service is more convenient than taking a cab. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | I think car-sharing service is more convenient than using my car. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

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| e. | I think car-sharing service provides convenience when traveling short distance during short time. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| **3. Storage (Parking) Utility** | | Strongly Disagree | | | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| a. | One great thing about car-sharing service is not being responsible for parking a car myself because I don't have to keep the car in my place. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | I like that I don't have to waste my time for looking for parking place thanks to car-sharing's own pods. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I like car-sharing service because I can access a car without keeping it. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| **4. Anti-Industry Utility** | | Strongly Disagree | | | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| a. | By sharing a car, I think I can avoid unnecessary marketing from automotive companies to promote consumption. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | With the use of car sharing service, I demonstrate environmental friendly consumption behavior. (Many of provided car is hybrid or electric car) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I think I can contribute to the improvement of urban environmental pollution by driving the only time I need. (Reducing driving unnecessary distance) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | In peer-to-peer case, I think it is helpful to environment by consuming less resource because I share my car (idle resource) to whom need the time I don't need. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| **5. Social Utility** | | Strongly Disagree | | | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| a. | The use of car sharing service allows me to be part of a group of like-minded people. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | Using car sharing service make me feel that I am hip and trendy. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | The more my friends around me start using car-sharing service, the more I am willing to use car-sharing service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | In case of peer-to-peer car sharing service, it would be funs that socially mingle with the car owner when rent a car. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e. | In case of peer-to-peer car sharing service, I would enjoy social interaction with new people by renting a car from individual.it would be funs that socially mingle with the car owner when rent a car. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| f. | I think it is good opportunity to know new people through peer-to-peer car sharing service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| g. | If the car owner's profile is interesting, I am more likely to try peer-to-peer car sharing service to him or her. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| **6. Sustainability Utility** | | Strongly Disagree | | | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| a. | I believe a shared car substitutes quiets well for a personally owned car. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | I thinks owning a car is not necessary if we can access a car easily | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

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| | whenever we want. | | | | | | | |
| c. | Sharing car is just as good as owns one. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | I think we can reduce unnecessary driving through car sharing service because we don't have to drive the only distance we need. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| **7. Technology Utility** | | Strongly Disagree | | | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| a. | The internet and smartphone is useful for consuming car-sharing service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | The internet and smartphone provide me quick and easy access to the service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I like that Internet and smartphone enable me access the car without visiting the rental office physically. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| **8. Emotional Utility** | | Strongly Disagree | | | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| a. | I would feel fun when I use car sharing service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | By using car-sharing service I feel get away from routine life. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I think that car-sharing service fits with my lifestyle. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| **9. Economic Utility** | | Strongly Disagree | | | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| a. | I believe that car-sharing service save my money in many different aspects such as owing a car, parking a car, oil price, maintenance, insurance and picking up car. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | I like the fact that car-sharing service because it saves my time: searching time for parking lots, driving unnecessary distance, picking up car. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I like that I can drive many different type of cars without economic constraints. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | Even though I own my own car, I am likely to use car-sharing service to try different cars (as a second car). | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e. | In case of P2P car-sharing service, I like the fact that I can earn some profits by renting my car to others when I don't use. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| f. | In P2P car sharing case, I like the fact that I can get some monetary benefits by utilizing dormant resource in idle time. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| **10. Trust Utility** | | Strongly Disagree | | | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| a. | I would use car-sharing service because I trust that available cars will be displayed as expected. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | I will be happy that users of car sharing service are truthful in dealing with one another. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I trust that the service company will provide enough safeguards to protect to me from liability for damage so that I am not responsible for. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e. | A considerable amount of useful feedback and reviews in usage history about car-sharing service by different user is important to me | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

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| f. | In case of P2P car-sharing service, since it borrows individual's car, I think trust is more important. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**Have you ever used car sharing service?.....** ( ) Yes ( ) No

**Part 3. If you have not used B2C car sharing service (e.g. Socar, Greencar, or Zipcar) please continue answering this section**. If you have an experience, please proceed to the next page (4).

| **Purpose of Use (If you have no experience of B2C car sharing)** | | Strongly Disagree | | | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| a. | I plan to use car sharing in the near future. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | I am considering the use of car sharing service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I would like to use car sharing service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | When I need to drive next time I will use car sharing service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **If you use car-sharing service, what is the purpose of using the service?** (multiple answers allowed)<br>( ) Commuting ( ) Work(e.g. outside duty) ( ) (grocery) shopping<br>( ) piking up/seeing off someone ( ) social activity/leisure ( ) traveling<br>( ) personal issues ( ) etc | | | | | | | | |
| **Expected satisfaction (If you have no experience of B2C car sharing)** | | | | | | | | |
| a. | I think car sharing service to satisfy my expectations. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | In general I think I will be satisfied with car sharing. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**Please proceed to the next page (5)**.

[Continued on the next page]

**Part 4. If you have used B2C car sharing service (e.g. Socar, Greencar, or Zipcar ) before, please answer this section.** If you have not, please proceed to Part 5.

| **1. How many times have you used car sharing service?**<br>( ) Once or twice a month ( ) Once or twice a week ( ) Three or four times a week ( ) Mmor than 5 times a week | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **2. What is your purpose of using car sharing service?** (Multiple answers)<br>( ) Commute ( ) Work-related (e.g. business travelling) ( ) (Grocery) shopping ( ) Pick-up/drop-off ( ) Social purposes/leisure<br>( ) Travelling ( ) Personal ( )Others | | | | | | | | |
| **Satisfaction with B2C car sharing service** | | Very dissatisfied | | | | | | Very satisfied |
| a. | B2C car sharing service meets my expectations. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I am satisfied with my previous experience with car sharing. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | I am satisfied with car sharing service in general. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **Loyalty to B2C car sharing service** | | Very dissatisfied | | | | | | Very satisfied |

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| a. | I think I will use car sharing service again. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | I think I will recommend car sharing service to friends and family. | 1 | 2 | 3 | 5 | 5 | 6 | 7 |

[Part5 continued]

**Part 5. P2P car sharing service (Person-to-Person car sharing service) (RelayRides)**

At this point, P2P car sharing service is not offered in Korea. Please answer whether i) you would like to rent a car as a user of the service; or ii) you would like to provide the service as a vehicle owner; and potential satisfaction with the cases above.

| **1.Purspose of Use: P2P car sharing (User: Will you rent another person's car for use?)** | | Strongly disagree | | | | | | Strongly agree |
|---|---|---|---|---|---|---|---|---|
| a. | I would like to use the service in a near future when I need to drive. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | When I need to drive I wish to use P2P car sharing service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I would like to use P2P car sharing service because of the accessibility of the cars. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | I will use it because it will save me money. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **2. Expected satisfaction with P2P car sharing (User: Will you be satisfied with renting another person's car)** | | Strongly disagree | | | | | | Strongly agree |
| a. | I think an experience of using P2P car sharing service is a pleasant one. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | I think I will be satisfied with P2P car sharing service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I think I will be satisfied with P2P car sharing service because I will have access to vehicles nearby. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e. | <u>In general</u>, I think P2P car sharing service will meet my expectations. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| **Purpose of use P2P car sharing service (Vehicle owners: Are you willing to rent out your car?)** | | Strongly disagree | | | | | | Strongly agree |
|---|---|---|---|---|---|---|---|---|
| a. | I am willing to rent out my car when I am not using it through P2P car sharing service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | I like P2P car sharing service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | I will share my car because I will have extra income with my car when I am using it. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | I wish to share my car through P2P car sharing service for people who need to drive. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **Expected Satisfaction with P2P car sharing service (Vehicle owners: Will you be satisfied with renting out my car?)** | | Strongly disagree | | | | | | Strongly agree |
| a. | I think I will be satisfied with a service that lets me rent out my car when I am not using it. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | I think I will be happy with meeting new people and experiencing something new by renting out my car. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | When I rent out my car, I will be satisfied by the fact that the car sharing company will take care of potential issues such as damage, | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

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| | loss, and identification of the service user. | | | | | | | |
| d. | I will be satisfied with making income by renting my car out when I am not using it. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e. | In general, I will be satisfied with P2P car sharing service as a vehicle owner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**Part 6.Demographic Question**

1. **Sex:** ( ) Female ( ) Male
2. **Marital status:** ( ) Married ( ) Unmarried
3. **Number of family members:** ( ) Less than 1 ( ) 1 or 2 ( ) 3 or 4 ( ) More than 4
4. **Age:**

( ) Less than or equal to 20 ( ) 21 to 25 ( ) 26 to 30 ( ) 31 to 35 ( ) 36 to 40 ( ) 41 to 45
( ) 46 to 50 ( ) 51 to 55 ( ) 56 to 60 ( ) 61 to 65 ( ) Greater than or equal to 66

5. **Level of education:**

( ) High school or less ( ) Attending vocational university ( ) Graduated from vocational university ( ) Attending 4-year university ( ) Graduated from 4-year university ( ) Master's degree or beyond

6. **Occupation:**

( ) Student ( ) Office worker ( ) Self-employed ( ) Civil servant ( ) Homemaker ( ) Others

7. **Average annual salary:**

( ) Not applicable ( ) Less than KRW 10 M ( ) Greater than equal to KRW 10 M and less than KRW 20 M ( ) Greater than equal to KRW 20 M and less than KRW 30 M
( ) Greater than equal to KRW 30 M and less than KRW 40 M ( ) Greater than equal to KRW 40 M and less than KRW 50 M ( ) Greater than equal to KRW 50 M and less than KRW 60 M
( ) Greater than equal to KRW 60 M and less than KRW 70 M ( ) Greater than equal to KRW 70 M and less than KRW 80 M ( ) Greater than equal to KRW 80 M and less than KRW 90 M
( ) Greater than equal to KRW 90 M

8. **Area of residence:** ( ) Seoul ( ) Gyeonggi ( ) Chungcheong ( ) Gyeongsang ( ) Jeolla ( ) Jeju

9. **Do you have car?** ( ) Yes ( ) No

| 10. The perception of car | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| a. | Car in general is simply a transportation method. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | Personal vehicle for me is one of many transportation methods. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | Car is a means of expressing my social image. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | Car is a means of expressing my social status. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

11. **How often do you drive your own car?**

( ) N/A ( ) 1-2 times a month ( ) 1-2 times a week ( ) 3-4 times a week
( ) more than 5 times a week.

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**12. How often do you use public transportation?**
( ) N/A ( ) 1-2 times a month ( ) 1-2 times a week ( ) 3-4 times a week
( ) more than 5 times a week.

**13. How often to do you take a taxi?**
( ) N/A ( ) 1-2 times a month ( ) 1-2 times a week ( ) 3-4 times a week
( ) more than 5 times a week.

Thank you**!** ☺