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[Review]

## Cargo Accident with Car Sharing in South Korea\*

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### Abstract

**Purpose** - This paper proposes some ideas with a view to reducing any possible accidents caused by unlicensed drivers and an illegal use of other's name, particularly by teenagers in consideration of easy and simple instruction on smartphone with very weak and mere consciousness on auto life.

**Research design, data, and methodology** - This study analyzes some accident cases between cargo trucks and rental cars in South Korea, and unlicensed vehicle with unlicensed drivers who use rental cars collided with cargo trucks which were loaded a lot of goods to be delivered to buyer designated. In order to fulfill this research, a case study accompanied with literature survey was conducted. Ideal suggestion for the right growth on rental car industry will be realized by legislation of the law.

**Results** - This paper classified bodily injury of the victim, property damage and damaged cargo arising out of the unlicensed who is driving on car sharing service in South Korea.

**Conclusions** - For the purpose of reducing cargo accidents caused by unlicensed drivers and an illegal use of other's name particularly by teenagers, this paper proposes some ideas of Amendment of the law, Paradigm shift of car sharing company, Preparation by association side and Technical Complementary Measures in South Korea.

**Keywords:** Cargo Accident, Car Sharing Service, Sharing Economy, Unlicensed Driving, Teenager, Cargo Legal Liability, Auto Insurance, Mandatory Insurance.

**JEL Classifications:** L92, K39, G22.

### 1. Introduction

Adjusting function of place on distribution is the function that diminishes a gap of space and/or distance between place of supplier and place of demander. For this, crucial role of adjusting function of place on distribution is a 'transportation' on the road, on the sea and on the air for the final destination.

Whatever the reason may be, if a contracting goods destroyed or delivered lately, seller, buyer and carrier duly faces a lot of big trouble that causes in turn claims of cargo

and indemnification on the basis of both sales agreement (contract) and transit agreement along with discreditable reputation.

Damage or loss by unlicensed driving is much serious to the victim, the injured and the damaged goods, properties including also offender, unlicensed driver and carrier consequently. In this regard, those who have much asset with economic power can overcome or recover the accident regardless of the offender and the victim. But those who have no economic power and have no any insurance of auto insurance and accident insurance can be easily placed on serious financial crisis that results in heavy loss to the offender and the injured and the disability with high degree of the victim to the foam of death and breakage of cargo.

Besides cases of illegal vehicle used such as unlicensed driver, teenage(minor)'s driving and illegal use of other's name are equal to the same troubles, difficulties and hardships against both parties concerned.

It is well known that inattentive and careless driving arising from very mere error or mistake, like as sending

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short message, watching movie, calling, chatting, touching the monitor on phone in a rental car can be made numerous and serious loss or damage to the anybody including valuable and priceless cargo. For instance, in cases of neither substitutes nor exchanges, there are death of body, extreme disability of body, cargo's breakage of cargo, loss of cargo, remaining priceless pain.

In view of cargo delivery on the sales contract and transport contract, this paper aims to study any possible issue and measures of an unlicensed driving as a cause of cargo truck accident on car sharing service in South Korea.

In the light of this reason, this study analyzes some cases of accident between cargo truck and rental car in South Korea, and purpose of study is the decrease and prevention of car accident. There are some cases that unlicensed vehicle with unlicensed driver who uses a rental car collided with cargo truck which was loaded a lot of goods to be delivered to buyer designated.

## 2. Literature Review

'Car sharing service' has been commenced since 2012 in South Korea. These days in Korea there are several companies, the two major ones being 'Socar' that invested by the SK and 'Greencar' who is a sister company of Lotte Rental, whose two market share is 90% in this field. It is predicted that accumulated membership of Socar exceeds over 2,500,000 person early year 2017 with 70% market share scored.

### 2.1. Sharing Economy and Car Sharing

Sharing Economy is a corporative demand economy that shares and uses products and services among the people, which differs from a word of ownership under mass production age.

Professor Lawrence Lessig (Lessig, 2008) in Harvard University has firstly used on 2008 a word of Sharing Economy, which means not being a owner of product and service, but being sharing product and service with each other on needs.

As social issues such as low growth of economy, jobs

crunch, reduced household income on 2008 world economy crisis increases, the mind of reasonable consumption with reducing excessive consumption appears naturally.

In addition to this, developing information technology based on internet and social network service did expand sharing economy system, because transaction of peer to peer becomes more easily and conveniently.

Sharing economy comprises a tangible and intangible type, and can be classified by mode of transaction, 1) sharing 2) barter trading 3) cooperating community. Sharing is a type of sharing the goods and service not being ownership, accordingly 'car sharing' is a representative of the same mode.

Barter Trading is a sale of secondhand that redistributes any product from needs extinguished to needs demanded of it.

Lastly Cooperating Community is a type of sharing both tangible and intangible things, through the cooperating way of internal user in a specific community. 'AirBnB' that offers private space to tourist in the world and 'Wisedom', knowledge sharing platform are the representatives well known of the same.

### 2.2. Accident of Cargo Truck and Liability

In the point of accident liability from car, car accident has to consider the two sides, the one is a offender and another is a victim. And then consider whether he or she has any insurance goods or not, and whether he or she has sufficient economic power or not in case of no insurance in order to compensate loss or damage to victim.

### 2.3. Auto Insurance and Liability

Contract of auto insurance is a contract that insurer pays insurance money for the insured's loss and damage to the third's injury, death and property while possession, use and control of the car insured. Also this contract is valid while the insured pays insurance premium to the insurer after signing of the contract.

<Table 1> Classification of sharing economy

Overview		Sharing resource	Case
Product service systems	A type of using goods as a service rather than owning them as products through purchase	Sharing car, bicycle, etc.	Zipcar, Car2go, Socar, Greencar, etc.
		Open Source Software (OSS), Cloud computing service, or SaaS (Software as a Service)	Linux, Dropbox, Salesforce.com, Amazon web service, Naver cloud, etc.
Redistribution markets	A type of redistributing used or slack goods	Swapping or redistributing goods in open marketplaces including flea market	eBay, Auction, Gmarket, etc.
Collaborative lifestyles	A type of sharing or exchanging less-tangible assets like space and skills together with people having similar interests and needs	Sharing houses and spare rooms, and other idle capacities such as working spaces, parking lots, experience, and money	Airbnb, Kozaza, TaskRabbit, Albachunkuk, Zopa, Kickstarter, Quirky, etc.

Source: Joo (2017).

<Table 2> Car accident, liability and possibility of recovery

	offender side against bodily injury and property damage (excluding criminal liability)	victim side against bodily injury and property damage
purchase of insurance	possible	possible
non-policyholder of mandatory insurance	impossible because of difference of size and impact of loss or damage and of economic power of offender	impossible in consideration of this, many countries operates compulsory auto insurance for the sake of victim. Limit of body is unlimited, but limit of property is upto krw20,000,000.
in case of having sufficient economic power	possible in case of having sufficient economic power to compensate the loss or damage to victim	possible
in case of neither insurance nor economic power	impossible because of difference of size and impact of loss or damage and of economic power of offender From the above, any person had better buy a auto insurance	impossible because of difference of size and impact of loss or damage and of economic power of offender impossible to full recover and no way to recover of death of body and high degree disability

Source: Adapted from Financial Supervisory Service (2017).

<Table 3> Unlicensed driving and driving while intoxicated on auto insurance

unit: krw

	bodily liability clause I	bodily liability clause II	property damage liability clause	personal injury	physical damage	remarks
Unlicensed driving	o	x	o upto 20,000,000 compensated as mandatory insurance	o	x	there are deductible 3,000,000 for driving while intoxicated and unlicensed driving on bodily liability clause I
driving while intoxicated	o	o deductible 3,000,000 including bodily liability clause I	o deductible 1,000,000	o	x	

Source: Adapted from Financial Supervisory Service (2017).

Exemption of the auto insurer is that duty of payment of insurance money is extinguished under the said insurance contract, and the same exemption has two mode 'legal exemption' and 'agreement exemption' on the auto insurance contract. Representatives of legal exemption are an unlicensed driving and driving while intoxicated under Korean law system as shown <Table 3>.

#### 2.4. How to use a car sharing service

Car Sharing Service on format has differences to 'rental car', namely format of car sharing service is different from the format of rental car as below.

Period of rental car is a daily base and charges a daily fee, but car sharing is an hour or minute base and charges per minute or hour based on real movement distance.

Concerning process of hire, rental car requires much steps of submission of licenses, writing contract of hire and checking the appearance, but car sharing is very simple, just requires a reservation for hire by way of smartphone's application(hereinafter "App") once a user subscribes the car

sharing site by App.

#### Procedures

Procedures of car sharing are as follows. Whoever wants to hire do touching car sharing app, and then do searching some place with a car waiting for customer, finally he/she(user) makes a reservation with automatically effecting payment.

The user moves to parking lot designated, and touches and controls his smartphone, which plays a role in smart key for engine start and stop without any real key.

User may drive freely the car of car sharing service without any limitation and may entertain time he want to hire, also it is possible to return the car within reservation time or to extend time. Additional fare of fuel surcharge that run road by movement distance charges duly toward the user's smartphone. It is true that this app of car sharing is really simple and convenience for customer in South Korea. In particular van, truck, motorcycles and scooter in car types can be hired freely in South Korea.

## 2.5. Previous Study

In relation to cargo accident, previous studies were focused on several aspects such as improvement of carsharing system, measurement of carsharing, development of application for carsharing and technical development of carsharing as follows.

With respect to technical development, Zhao (2010) studied application of revenue management in car-sharing dynamic pricing. Roh, Do, Lee, Byeon, and Lee (2013) found a site selection of carsharing service by using a GIS and an application of spatial analysis. Nair (2010) studied design and analysis of vehicle sharing programs: a systems approach. Kang, Choi, Park, and Lee (2014) studied on the effect of availability of car sharing based on rail stations in Seoul.

And considering expansion matter of car sharing system, there were many research. Park and Kim (2014) studied user centered car-sharing service design – focus on nanumcar in Seoul. Park and Moon (2013) studied demand estimation and impact analysis of car-sharing service. Park and Park (2015) studied impact of the car-sharing service on transport demand and taxi service. Roberts (2014) studied engaging teenage social networks to enhance driving safety. Lee and Kim (2015) studied vehicle relocation optimization for one-way carsharing. Kim, Lee, and Choi (2014) studied preferences factors analysis for car-sharing. Joo (2017) studied motives for participating in sharing economy: intentions to use car sharing services.

In the meanwhile, previous study of accident with regard to car sharing is that Leonard (2016) investigated of patterns of adolescent driving behaviors resulting in fatal crashes and their implications on policy.

Lastly regarding legislative problem of car-sharing, Yang (2010b) studied legislative problem of car-sharing in view of civil law.

## 3. Analysis of Cargo Accident on Car Sharing

Renting a car and returning the car by way of Application on the smartphone is very easily and swiftly processed within two minutes by the user who temporary needs to drive, this is because that all information needed such as license details and payment details of credit/check card is already placed into Application for Car Sharing Service on smartphone. At this moment for the process of reservation, since all step of reservation can be touched by user only on phone, nobody watches all process of rental car, that is to say 'unmanned operation'.

This 'unmanned operation' at car sharing service is the best advantage of service for customer and user, which makes peoples so much comfortable, joyful and happy. And it is true that the hint of very fast industry growth is a really

'unmanned operation' mode.

However, 'unmanned operation' may lead to adverse effect(by-effect) as no man of the staff of car sharing company watches and monitors a course of renting a car. Nobody can identify who is driving notwithstanding the owner of smartphone installed the Application for Car Sharing, and identify whether an illegal use of other's name or names of their parents of teenage or not.

Cases that rental car can be exploited by the minor(age 18 years below old) are an illegal use of their parent's names, an acquaintance and the unidentified got illegally by various channel. According to KIDI(Korea Insurance Developpe Institute), motor accidents by the minor(teenager) were rapidly increased from 8020 cases in 2013, 9079 cases in 2014 to 9646 cases in 2015, during which teenage, 486 persons were died and 37,439 persons were injured(Kim & Lee, 2017).

To put it more concretely, case of cargo accident incurred by the minor(age 18 years below old) is as follows: -

### 3.1. Cargo Damage with car sharing

Buyer, Finecamera Co. Ltd. did buy 'digital camera 100 pieces in sum of krw100,000,000 from seller, Mayo Trade Co. Ltd. The said shipment, digital camera 100 pieces arrived at Pusan Port in Korea and further transported to Buyer's Office at Guro-dong at Seoul, using cargo truck of 2 ton capacity. For analyzing a cargo damage by car sharing service, this case is a virtual case under international transportation. This is because that either way of virtual and real case is the same results.

On route to Guro-dong in Seoul, Korea, the above cargo truck of 2 ton capacity was capsized by avoiding Sonata driven by the unlicensed 17 aged boy, which caused amount of krw7,000,000 as commercial invoice value of 7 pieces heavily broken.

From this unexpected accident, Buyer, Finecamera Co. Ltd. properly received insurance money, krw 7,000,000 as usual form the cargo underwriter, after which the cargo underwriter commenced subrogation right against the car owner. However the auto insurer of the rental car, Sonata refused to give a insurance money to the cargo underwriter because of unlicensed driving at the time of accident.

### 3.2. Other car accidents

On February, 5, 2017, the boy, "A" was found to be dead near garden in an apartment, Gwangsan-gu, Gwangju-city. The boy, who is 17 years old with a junior of high school, got an investigation of policy station because of the car accident while driving took place near residence town. He did not have a license as the required age to get a driver's license should be over 18 years old in Korea. The car driven by the boy, "A" was found to have been rental car through the car-sharing service from his friend that was

used to car sharing service by use of account of his mother. Policemen guess that the boy, "A" choose the death with big trouble under heavy pressure of the car accident took place.

On September 2016 in Gwangju-city, a high school student with 17 years old was arrested by policemen for the reason of unidentified car accident because he drove a rental car with his father's drive license.

On August 2016 in Gosung-gun, Kyungnam-province, a high school girl with 2 girls in the rental car service, car sharing was dead by collision to the dump truck stopped.

On June 2016, a teenager(minor) couple was arrested by the policyman because they did drive a rental car service, car sharing with no license and then tried to report toward a insurance company by way of exchange of driver at the time of accident.

### 3.3. Car accident and relevant law in South Korea

Whoever want to drive a vehicle must get a auto license by the authority. All driver must obey the laws of 'Road Traffic Act' and 'Act On Special Cases Concerning The Settlement Of Traffic Accidents' while driving. Naturally driver without auto license can be punished by the relevant law 'Road Traffic Act' and 'Act On Special Cases Concerning The Settlement Of Traffic Accidents'.

According to Korea Ministry of Government Legislation in 2017, law of Road Traffic Act is as follows,

Road Traffic Act Article 43 (Prohibition on Driving Motor Vehicle without Driver's License)

Anyone who does not obtain his/her own driver's licence from the commissioner of a district police agency pursuant to Article 80 or anyone who holds a driver's license, the effect of which is suspended, shall be prohibited from driving any motor vehicle.

Article 44 (Prohibition on Driving while Intoxicated) (1) While intoxicated, no one shall drive any motor vehicle, etc. (including construction machinery, other than construction machinery provided for in the proviso to Article 26 (1) of the Construction Machinery Management Act; hereafter in this Article and Articles 45, 47, 93 (1) 1 through 4, and 148-2, the same shall apply).

As for a car accident, the driver as a offender should take a responsibility for both death, bodily injury of victim, and property damage as a pure indemnification, and bodily injury of driver and damage to car itself may be repaired or may be abandoned by his own discretion. On the other hand, repairing or no repairing the car damaged is the only car owner's option. In most cases, bodily injury is taken by medical treatment from the medical doctor, however repairing the car is not taken by the car owner in accordance with his financial status.

Under the above circumstance, many countries do operation of motor insurance as mandatory insurance in

order to protect a innocent and good natured person, South Korea also do force unlimited indemnification for bodily injury on every driver and force upto krw 20,000,000 for property damage on every driver as a mandatory insurance (Compulsory Auto Liability Coverage).

According to Korea Ministry of Government Legislation in 2017, law of Act On Special Cases Concerning The Settlement Of Traffic Accidents is as follows,

Act On Special Cases Concerning The Settlement Of Traffic Accidents Article 3 (Special Cases for Punishment) (1) A driver of a vehicle who commits a crime provided for in Article 268 of the Criminal Act by reason of a traffic accident shall be punished by imprisonment without prison labor for not more than five years or by a fine not exceeding 20 million won.

Article 4 (Special Cases for Insurance Coverage, etc.) (1) In the case where a vehicle which has caused a traffic accident, is covered by insurance or mutual aid in accordance with the provisions of Articles 4 and 126 through 128 of the Insurance Business Act, Article 60 and 61 of the Passenger Transport Service Act, or Article 51 of the Trucking Transport Business Act, the driver who commits a crime provided for in main sentence of Article 3 (2) shall not be prosecuted: Provided, That this shall not apply to any of the following cases:

1. In cases of falling under the proviso to Article 3 (2);

Regarding rental car business, there are two acts, both 'passenger transport service act' and 'trucking transport business act' as below: -

According to Korea Ministry of Government Legislation in 2017, law of Passenger Transport Service act is as follows,

Article 2 (Definitions) on passenger transport service act

The terms used in this Act shall be defined as follows: <Amended by Act No. 9733, May 27, 2009; Act No. 11690, Mar. 23, 2013; Act No. 12377, Jan. 28, 2014>

1. The term "automobile" means any passenger car and bus referred to in Article of the Motor Vehicle Management Act;
2. The term "passenger transport services" means any passenger transport business, rent-a-car business, bus terminal business, passenger transport franchise business;
3. The term "passenger transport business" means any business that transports passengers for profit using automobiles to respond to demand from others;
4. The term "rent-a-car business" means any business that rents automobiles for profit to respond to demand from others;

According to Korea Ministry of Government Legislation in 2017, relating law is as follows,

Article 34-2 (Matters to be Observed by Rent-A-Car Business Entities)

- ① No rent-a-car business entity shall exchange money

and other goods with an automobile management business entity under the Motor Vehicle Management Act or with a transport business entity or employee under the Trucking Transport Business Act, in connection with car rental caused by breakdown of an automobile or an accident. [This Article Newly Inserted by Act No. 12377, Jan. 28, 2014]

source: Passenger Transport Service Act

② rent-a-car business entity shall check qualification for driving service when renting a car based on rental car contract, and shall not rent a car to the driver as below case, Provided that this shall not apply to a legal entity as a rent with blank in driver's check box of rental car contract.(free translated by author by imperfection of amended act upto now).

1. in cases of unlicensed from minister of district policy agency or pause of license referred to in Article 80 paragraph (1) of Road Traffic Act(free translated by author by imperfection of amended act upto now).

2. in case of beyond range of driving permission referred to in Article 80 paragraph (2) of Road Traffic Act(free translated by author by imperfection of amended act upto now).

#### 4. Suggestion of Car Accident with Car Sharing Service

As analyzed at chapter III, this paper classified bodily injury of the victim, property damage and damaged cargo arising out of the unlicensed who is driving on car sharing service. By this reason, this paper proposes some ideas with a view to reducing any possible accidents caused by unlicensed driver and an illegal use of other's name, particularly by teenage in consideration of easy and simple instruction on smartphone with very weak and mere consciousness on auto life.

##### 4.1. Amendment of the law

As a whole, every rental car company has a duty of confirmation who is a driver on 'application for the hire agreement' while hiring a car, and simultaneously has to identify whether the driver has a driving license or not. Naturally car sharing company has to obey this regulation for the sake of all parties.

It is no wonder that verifying who is a driver, does he/she has a valid license, how old is he/she by checking of teenage through identification card and drive license is far crucial to car sharing company.

With regard to law that will be effected in September 2017 as under, Ministry of Land, Infrastructure and Transport offers 'verifying system of driver' to company of rental car so that they may take a advantage of the same system for reducing any accident.

According to Korea Ministry of Government Legislation in 2017, verifying system of driver's law is as follows,

Article 34-3 (Installation of system for identifying driver); This article will be officially effected on 1 September 2017 in South Korea.

① The Ministry of Land, Infrastructure and Transport shall install system for identifying driver, and shall use this system for rent-a-car business entity.

② The Ministry of Land, Infrastructure and Transport may demand inquiry of information in relation to Article 34 each paragraph (2) 2 through Article 36 paragraph (1) of Electronic Government Act to the chief of the National Police Agency. Also the chief of the National Police Agency shall respond to this demand without due cause.(free translated by author by imperfection of amended act upto now).

However, this is not proper to fix it, alternatively it is strongly needed to amend that car sharing company must check who is a real driver and whether a teenage is a driver or not. Further strongly needed to make a legislation too that those who are not checking a driver and a teenager will be punished by breach of the law and will be charged heavy penalty to company.

On the other hand, at to protect victims of car accident in cases of hit-and-run accident, unidentified of owner and non-policyholder of mandatory insurance, the Korean Government operates 'Business of Guaranteeing Motor Vehicle Accident Compensation' by which compensation for the loss of death or injury of any person and property damage is guaranteed from the government on the side of national social welfare.

##### 4.2. Paradigm shift of car sharing company

Irrespective of business type, all businessman has to prepare any solution for indemnification of the third parties' legal liability in the course of doing his own business, and by this reason there is a insurance goods, Commercial General Liability Insurance for adaption of the need from businessman to insurer.

By the same reason, car sharing company also does insure 'Commercial General Liability Insurance', then consider the way that covers any possible accident incurred by teenage through an illegal use of other's name and parent's name at the time of rental car on app of smartphone from the 'Commercial General Liability Insurance'.

In addition, car sharing company needs to reconsider some questions that is there any exemption of auto insurance and commercial general liability insurance, namely does unlicensed driving of teenage cover on both auto insurance and commercial general liability insurance, what is the limit of each coverage relating to bodily injury and property damage. On the other hand, it may be considered

the way that a special agreement between auto insurance and teenage's parent takes a risk of unlicensed driving incurred by an illegal use of their parents name.

In the meanwhile, if an unlicensed driving by the teenage does not cover from both auto insurance and commercial general liability insurance, car sharing company should prepare any measures caused by unlicensed driving accident to protect any victim.

To the contrary of the offender side of unlicensed driving, all victim should count what type of insurance they have, do they have accident insurance, marine cargo insurance, property insurance, etc. Needless to say that whoever are concerned about any possible risks unexpected in future may buy any insurance goods.

In view of physical distribution, during cargo and goods movement en route to buyer, cargo owner needs to buy marine cargo insurance, transportation insurance and any carrier carrying the shipment needs to buy cargo legal liability. If an insurer of marine cargo insurance or transportation insurance gives an insurance money to the assured, ie cargo owner, the insurer commences subrogation right against inland cargo carrier or car sharing company alternatively.

#### 4.3. Preparation by association side

If an unlicensed driving by the teenage is not a risk covered on both auto insurance and commercial general liability insurance, the reason is because that unlicensed driving is a violation of 'Road Traffic Act'. In this view, payment of insurance money will be faced from big criticism of violation of law in point of connivance of the breach of legal system in South Korea that is a not easy issue form the public sentiment.

If an unlicensed driving by the teenage is the risk covered with low probability by both insurances of the same, payment type of unlicensed driving will be either 'proportional compensation' or 'single compensation' by the one insurer based on principle of indemnity.

If an unlicensed driving by the teenage is not risk covered on both auto insurance and commercial general liability insurance, as previously mentioned, if no risk covered of an unlicensed driving is placed on both insurances, the alternative way is a defence against the risk of an unlicensed driving, making an association or federation of car sharing company and defending this risk.

An association or federation of car sharing company can take a pure risk of an unlicensed driving by the teenage as usually other association or federation is doing to do so. This kind of accident is not frequent, hence management of association or federation is not also difficult. From the above, it is very reasonable that car sharing company pays membership fee annually, then association or federation covers accident of unlicensed driving by the teenage and an illegal use of other's name.

If non-marine insurer can not undertake the risk of an unlicensed driving by the teenage, the reason is because that unlicensed driving is a violation of 'Road Traffic Act' and view of connivance of the breach of legal system in South Korea as mentioned before.

Looking at another facet, non-marine insurer on marine business takes a risk of ship or vessel as a type of Hull Insurance for protecting ocean carrier carrying the shipment. In hull insurance, bodily injury of third party legal liability and oil pollution is not covered, in other words exclusion of risks on it. As to overcome this issue, shipowner's club, P&I(protection and indemnification) club of the ocean carrier undertakes these risks to pay for the loss or damage incurred during transit in the worldwide.

#### 4.4. Technical Complementary Measures

These days with respect to 'Identification Security System' of driver, 'Fingerprint Identification Security System' and 'certificate verification' are available, but car sharing company does not choose neither 'Fingerprint Identification Security System' nor 'certificate verification' because of cost of purchase and maintain. These programs can be fixed while manufacturing and updating, even though car sharing company calculates firstly cost too.

Apart form app of car sharing, 'Fingerprint Identification Security System' as a program of driver identification should apply to parking lot where a car for hire is waiting for customer.

If Korean government is indeed concerned about people's safety, they should guide adoption of driver identification for the sake of everybody toward car sharing company in South Korea.

### 5. Concluding Remarks

#### 5.1. Summary

Damage or loss by unlicensed driving is much serious to the victim, the injured and the damaged goods, properties including also offender, unlicensed driver and carrier consequently. This study analyzes some cases of accident between cargo truck and rental car in South Korea, and purpose of study is the decrease and prevention of car accident. There are some cases that unlicensed vehicle with unlicensed driver who uses a rental car collided with cargo truck which was loaded a lot of goods to be delivered to buyer designated. By this reason, this paper proposes some ideas with a view to reducing any possible accidents caused by unlicensed driver and an illegal use of other's name, particularly by teenage in consideration of easy and simple instruction on smartphone with very weak and mere consciousness on auto life.

## 5.2. Limitation

This study analyzed cases of cargo accident occurred by unlicensed of teenage during car sharing in South Korea. But this study fails to show the statistical data that how many accident does unlicensed of teenage during car sharing take place, what is an annual case and annual accumulated to date, with mentioning that unlicensed driving is quickly increasing. This aspect will be improved by use of this paper by step-stone for further research, giving inspiration to the physical distribution, insurance and legal field.

## 5.3. Meaningful point

As previously mentioned in literature survey on chapter

II, this study has significance for analyzing accidents arising from car sharing. Previous study toward car sharing is focused on such as analysis of business type, expanding plans, association of environment, merits and demerits of services, adoption of car sharing to company with customer, developing technology with App, therefore no study on analyzing accidents arising from car sharing is found to date in particular in South Korea.

This study suggests some ideas to overcome issues of various mode of car accident, indemnification for the victim and measures of protecting person and rental car company, through analyzing cases of cargo accidents and bodily injury, death and property damage resulted from unlicensed driving by teenage during car sharing in South Korea. Ideal suggestion for the right growth on rental car industry will be realized by legislation of the law.

## References

- Financial Supervisory Service. (2017). *Car accident, liability and possibility of recovery*. Retrieved April 01, 2017, from <http://www.fss.or.kr/fss/kr/bbs/view.jsp?bbsid=1207398916669&url=/fss/kr/1207398916669&idx=1386038394336&title=>
- Joo, J. H. (2017). Motives for Participating in Sharing Economy: Intentions to Use Car Sharing Services. *Journal of Distribution Science*, 15(2), 21-26.
- Kang, P. M., Choi, H. S., Park, J. T., & Lee, S. J. (2014). Study on the Effect of Availability of Car Sharing based on rail stations in Seoul. *Journal of The Korean Society for Railway*, 17(5), 381-389.
- Kim, B. J., & Lee, H. J. (2017, February 8). *Car sharing and teens' dangerous speed*. Dong-A Ilbo, Retrieved from <http://news.donga.com/3/all/20170208/82763250/1>
- Kim, S. H., Lee, K. J., & Choi, K. C. (2014). Preferences Factors Analysis for Car-sharing. *KSCE Journal of Civil Engineers*, 34(3), 1241-1249.
- Leonard, C. M. (2016). *An investigation of patterns of adolescent driving behaviors resulting in fatal crashes and their implications on policy*(Order No. 10245669). Available from ProQuest Dissertations & Theses Global. (1845308971). Retrieved April 27, 2017, from <https://search.proquest.com/docview/1845308971?accountid=170618>
- Nair, R. (2010). *Design and analysis of vehicle sharing programs: A systems approach*(Order No. 3426388). Available from ProQuest Dissertations & Theses Global. (762217621). Retrieved April 27, 2017, from <https://search.proquest.com/docview/762217621?accountid=170618>
- Park, J. S., & Moon, J. H. (2013). Demand Estimation and Impact Analysis of Car-Sharing Service. *Journal of Transport Research, Journal of Transport Research*, 20(2), 61-73.
- Park, J. S., & Park, J. H. (2015). Impact of the Car-sharing Service on Transport Demand and Taxi Service. *Journal of Transport Research*, 22(2), 19-34.
- Roberts, S. C. (2014). *Engaging teenage social networks to enhance driving safety* (Order No. 3633425). Available from ProQuest Dissertations & Theses Global. (1611960398). Retrieved April 27, 2017, from <https://search.proquest.com/docview/1611960398?accountid=170618>
- Roh, Y. S., Do, M. S., Lee, S. H., Byeon, W. H., & Lee, J. B. (2013). A Site Selection of Carsharing Service by Using A GIS and An Application of Spatial Analysis. *Korean Society of Road Engineers*, 9, 70.
- Yang, Y. (2010). *Study on legislative problem of car-sharing in view of civil law* (Order No. 10378121). Available from ProQuest Dissertations & Theses Global. (1873737803). Retrieved April 27, 2017, from <https://search.proquest.com/docview/1873737803?accountid=170618>
- Zhao, Q. (2010). *Application of revenue management in car-sharing(s) dynamic pricing*(Order No. 10362652). Available from ProQuest Dissertations & Theses Global. (1868791555). Retrieved April 27, 2017, from <https://search.proquest.com/docview/1868791555?accountid=170618>