COLLABORATIVE ECONOMY DEVELOPMENT IN THE TRANSPORTATION SECTOR IN FRANCE: CHARTING A CONSTRUCTIVE PATH FORWARD

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Abstract

With the lightning speed of technological evolution, collaborative economy has become the driving force behind the economic development of most countries' modernization and change. In France, collaborative economy platforms have blossomed tremendously and initiated an unprecedented expansion. Some platforms have even gained an international leading role in this domain. The French collaborative economy in particular has developed a dynamic force in many fields with the combination of different factors and facilities. Therefore, this study focusing on French collaborative economy may unfold the reality of shared mobility in France. It is a common consensus that an eco-friendly transport model should emit less carbon. Thus, shared transport may be the solution to reduce urban road-traffic pressure, environmental pollution and

travel related expenses. However, shared mobility expansion has its limitations, particularly while embarking on an increasing world competition, collaborative economy is at the same time facing several challenges, which might create some problems in the city management. How to manage an ordered development of shared mobility market, avoid drawbacks that appear during its exploitation and create a harmonious and sound traffic environment while offering people comfort? This is the problem that users themselves and shared mobility companies and the policymakers must consider carefully.

Keywords: Collaborative economy, Urban governance, Shared mobility, Carsharing, France

INTRODUCTION

For the past few years, the French collaborative economy has developed rapidly driven by its economic and technological development (European Commission, 2018; Bostsman and Rogers, 2011). With the advent of sharing era, French people gradually make use of conveniences from sharing economy in all aspects of life. The consumers have simultaneously played a key role in promoting the development of French shared mobility. But actually, they were facing a series of problems despite of the convenience provided by shared mobility models (Jacquet, 2015).

The development of shared mobility is particularly important. It involves a variety of transport models, in particular automobile sharing, shared bikes, car sharing between different persons, transport services on request, micro transit and so on (Le Vine and Polak, 2015). Carsharing means several persons use the same car. The driver only drives the car, but he is not the owner of the car. Carsharing is generally coordinated by carsharing companies. Shared bikes are referred as the shared bike services offered by companies at metro stations, commercial centers and public service areas. It is a shared time renting model. Bikes are the main transportation means used here. As for carsharing, it is a joint and organized use of a car by a non-professional driver or by other third-party users. The carsharing platform connects passengers with drivers. It gives personal advantages to drivers such as reducing expenditures on fuel and maintenance, etc. (Machado, De Salles Hue, Berssaneti, and Quintanilha, 2018).

This study mainly analyses the present situations of the development of French shared cars, bikes and carsharing services and problems encountered in the sector. More specifically, it explores the development of the shared mobility industry. With the discoveries of the analysis, this research may contribute to considerable and reasonable suggestions and advices to develop them better.

The main interest of this study is to find practical solutions to better develop the sector of collaborative economy. As an expanding sector, this analysis is worthy of governmental decision-makers, managers, businessmen and private individuals' attentions that the improvement of the transportation sector can be beneficial to all the parties involved. Through the in-depth study of this investigation, it would be possible to propose useful recommendations in terms of security, methods of payment, etc. for the expansion and better development of this promising transportation sector.

This article focuses on the expansion of French shared cars, bikes and carsharing services. The French collaborative economy started earlier and quickly expanded. However, the expansion of collaborative economy in the transportation sector seems to be facing bottlenecks: the sector has gained plenty of opportunities and has met many stiff competitors because some shared mobility companies went bankrupt while some were threatened by bankruptcy.

The study layouts are as follows. Following the introductory chapter, the second chapter is a short description of shared mobility. As for the third chapter, it presents the methodological framework. Next, in the fourth chapter, the research results are discussed. Chapter five proposes measures to promote the industrial development, whereas chapter six analyses the development perspective of the collaborative economy. Last but not least, the concluding remarks are made in chapter seven.

SHARED MOBILITY SURVEY

The French shared mobility sector has an ancient tradition and the market is relatively mature and dynamic (Mosquet and Pélata, 2019). With the advent of collaborative economy and the tendency of showing a high development potential, shared mobility has become a diversified transport model and an important transport means for people in France (Métivier, 2014), thus contributing to the sustainable development of the transport sector there.

Analysis of Shared Mobility

History of the Development of Shared Mobility

The concept of sharing has been around for a long time (Wallsten, 2015; Sutherland and Jarrahi, 2018). In traditional societies, borrowing books or sharing a piece of information between friends, and even borrowing objects from neighbors, is a form of sharing. In 1965, in Amsterdam, an anarchist called Provo proposed to the municipal council to set up a ten thousand self-service bike system for public use. Despite of the rejection from the politicians, Provo has decided to put the self-service bikes at people's disposal, there were about one hundred bikes painted in white available all around the city (Médard de Charbon, 2019). The

people could freely use them wherever they are. This is referred to as the "white bike programme" (Schimmelpennick, 2009), which has initiated shared mobility. With the economic growth and the progress made by science and technology, France made new endeavors in the domain of collaborative transport. The first French car sharing experience happened in Montpellier, in 1971 (Jorge & Correia, 2013, Shaheen, S., Sperling, & Wagner, 1999). Consecutively, the self-service car system called ProcoTip was initiated two years later.

Vélib' was set up on July 15th, 2007 by Paris City Council (Midgley, 2011; Chakhtoura and Pojani, 2016). It is the large-scale Parisian self-service bike system (López-Pumarejo, 2011); the bike sharing service is provided at underground stations, trade centers and public service areas. From September 2008 until now, Covoiturage.fr has become the most popular used car sharing site in France. In June 2012, Covoiturage.fr launched an on-line booking service: since then, it had gained the trust of consumers, the passengers can deposit their fees and carry on their trips on-line and after that the site pays back the driver after the trip (Longhi, Mariani, and Rochhia, 2016). On April 29th, 2013 the French service Covoiturage.fr was renamed BlaBlaCar. Another brand called Autolib', which is known as the "city of urban transports" in Paris was launched in 2011. It is a public carsharing company that provides self-service electric cars. They are available in Paris and its suburbs.

In December 2011, Uber announced the beginning of its activities in Paris (Manangi, 2017). Uber is an American technological firm which promotes and operates mobile applications helping users to get in touch with drivers offering transport services. On January 9th, 2014, Bordeaux urban community began operating Bolloré group electric cars in a carsharing system called BlueCub. It was set up to provide users with a practical and quick carsharing service.

In 2017 the self-service electric scooter Gogoro was launched by the new operator COUP in a self-service system in Paris. The German operator COUP proposed 600 eScooters in a self-service system in Paris (Dillet, 2017). Benefiting from a similar experience in Berlin, where the firm declared to have launched one thousand scooters, COUP which belongs to Bosch group has decided to launch appealing strategies in Paris.

Transport Development Status in France

The French national economic platform of shared mobility has promptly expanded and dominated the local market over the years. Some of them have already become the top leaders in the world market in the related domain contributed by joint effects coming from several factors such as technology, economy and culture. Stimulated by collaborative economy, the concept of shared mobility has appeared in the domain of transports and it is a transport means having the significance of development potential and social value (Bertolini, le Clercq, and Kapoen, 2005).

Shared mobility plays an important role in collaborative economy. The French shared mobility presently provides the public with personal transport means: cars, scooters, bikes, electric scooters as well as carsharing services.

Vélib' initially started its activities only in Paris, but since early 2009 the system has expanded over 30 cities in the central suburb (Côme, Randriamanamihaga, Oukhellou, and Aknin, 2014; Randriamanamihaga, Côme, Oukhellou, and Govaert, 2013) progressively mobilizing about 20,000 bikes and 300,000 users every year. From its launching, the renting has exceeded 324 million and the average daily renting is estimated up to 100,000 euro. But the participation of many players has already existed in the market of shared mobility in Paris. From October 2017, four companies launched shared bike services in Paris: GoBee Bike, Obike, Ofo and Mobike (De Clercq, 2017). After a month and a few days later, GoBee Bike announced its withdrawal from the French market due to insufficient funds and harsh competition.

The French carsharing has developed since the late 1990s (CIVITAS, 2020). At present, the carsharing services are available in about twenty cities with approximately 25,000 users. Autolib' has provided 3,907 vehicles covering over 1,100 bus stations in 110 cities of the Paris Region. The service was shut down for good on August 1st, 2018 because of an enormous debt.

As for the car sharing, it is not an encouraging situation. The number of passengers per car during rush hours has remained merely a person. Therefore, the number of empty seats in the car is very high. In 2007, 78 carsharing sites were set up for the purpose and recently the number of sites kept increasing (ADEME-6t-bureau de recherche, 2015). Actually, the French government had paid much more attention to carsharing services due to their popularity. There was even a celebration for the first-time of car sharing day in France on September 17th, 2010. In France, the carsharing system had 153,000 users and 3,900 vehicles in 2014.

Principal Models of Shared Mobility

Automobile-Sharing

Automobile-sharing is considered as a car shared by numerous passengers. A carsharing service is a system, but here in particular it is referred to as a "service" because renting services are offered by private car owners to drivers (Burkhardt and Millard-Ball, 2006). Shared cars have a unique place of departure, i.e., the car is brought back to its initial departure station after use or sometimes shared cars can be in "free floating", i.e., the users park their cars at the arrival point, either on the street or in a station. The users usually use shared cars for routes different from their journey back home. At any time, the clients can take the vehicle in a nearby parking to reduce different taxes the owner must pay (parking fees, car insurance fees, taxes, etc.). The market dominants in France are Autolib', BlueCub and Auto Bleue.

Shared Bikes

Bike-sharing services are provided by firms at underground stations, trade centers and public service areas. This mobile service helps people to travel within the vicinity or within the range of the urban areas. This form of bike renting is a type of collaborative consumption (Pizzol, Ordovás de Almeida, and Soares, 2017). There are two main ways of using the vehicle. One way is involved in renting a bike at a terminal: the bike is rented from a bike rental station. The vehicle is connected to the station via a locking system, and once the service is set up, the user can unlock it with a smart card or using a device equipped with NFC technology. At the end of the trip, the user can drive the vehicle back to any chosen rental station where it is also applicable to a smart bike and Velib'. Another way is "free-floating". It was developed through the implementation of NFC technology in the bulk of smart phones and easy access to connections. Bikes can be parked anywhere, provided the traffic is not hindered especially pavements and roads. It is easily accessible once the internet connection or NFC smart-card reader is installed in vehicles with an anti-theft device. Users can rent bikes via smart phone applications or smart cards like GoBee Bike, Obike, Mobike, Ofo, etc.

Carsharing

Carsharing is the practice of sharing a car for regular travelling, so that more than a person can travel in the same car (Kent and Dowling, 2013). The carsharing uses smartphone applications to connect drivers and passengers. The system can accommodate many people to use a single vehicle, thus reducing each user's traveling expenses, such as fuel expenses, tolls and stress produced by driving. Vehicle-sharing is a practical means of occupying all the seats of a car, which would otherwise remain unused in contrast of the driver is the only person to use the car (Sprei and Ginnebaugh, 2018). Carsharing is becoming more and more popular among working people in some areas where there are more local jobs while living in residential areas with high population density. The main companies are Carpooling and BlaBlaCar, etc.

RESEARCH METHODOLOGY

Kumar (2005) defines a research as "a process for collecting, analysing and interpreting information to answer questions". Moreover, in order to qualify a research, Kumar states that certain characteristics must be fulfilled such as "be controlled, rigorous, systematic, valid and verifiable, empirical, and critical". Based on the above mentioned criteria and the consensus, therefore, the aim of this research is to thoroughly examine the present situations of the development of the French mobility services market and problems encountered in the industry. More specifically, it also involves the investigation of the collaborative economy development in

France. In terms of data collection, we apply two main methodologies namely, interviews and document analysis.

The Setting and Sampling Method

With the consideration of the efficiency and the accuracy of the research, we conducted overall fieldwork and surveyed the premises involved. Our research had begun by contacting both employees working in the shared mobility sector and the users of the sharing products and services in France, particularly Parisian Region in general. Being the agglomeration of a dense population estimated at 11,078,546 in 2021, Parisian Region is an ideal geographical area and object of our research since it is the national capital of France, the political center, cultural and commercial hub, artistic crafts and more specifically cultural and creative industries of the country (Martin, 2016). The Parisian region is significant because the residents there have a higher GDP per capita in France and it constitutes a popular destination for visitors throughout the world. Thus, it is a huge market for collaborative consumption including carsharing, bike-sharing, carpooling, Airbnb, to name a few.

According to Kumar (2005, p.164) "Sampling, therefore, is the process of selecting a few (a sample) from a bigger group (the sampling population) to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group." More specifically, sampling is the process of selecting limited number of elements from large group of elements (population) so that, the characteristics of the samples collected fits that of the population. Sampling is an important concept in research; it helps us only estimate or predict the population's characteristics of interest.

In this study, we use two sampling frames such as employees and users of French collaborative economy. We collect the required data through the help and assistance from the exchange students of Nanfang College of Sun Yat-Sen University in China who were studying in French universities. This includes various bikesharing companies in France, including Vélib', Autolib', Uber, GoBee Bike, BlueCub, Auto Bleue, and BlaBlaCar, to name a few. In order to protect the privacy of the informants, their personal data will remain strictly confidential and would not be disclosed to any person, entity or to any third parties.

In total, there were 15 respondents or informants who participated in the study on the ground of consent including 10 employees of shared mobility and 5 users of the collaborative economy. Their participation and contribution have provided some valuable insights and information to this research. This would not have been possible without their experience in the service of collaborative economy, their familiarity with the collaborative industry and the daily operations. They were also motivated by our research and were chosen to join our survey.

Furthermore, these professionals and users were regarded as the most qualified and representative players of the collaborative industry compared to any other category of the population in the field.

Interviews

Taylor and Bogdan (2015) defined in-depth interviewing as "repeated face-to-face encounters between the researcher and informants directed towards understanding informants' perspectives on their lives, experiences, or situations as expressed in their own words". With the awareness of its significance in efficiency and credibility as well as its appropriateness in collecting data, this research practices in-depth interviews to conduct the study. To collect the required research data, we forwarded a letter at the beginning to the participants or informants to explain the details of the research objectives and motivations. In order to protect the participants and informants privacy and identity, they will remain anonymous during the entire process of the interview. The eligible informants interviewed in this study are considered as the most representative of the professional in this industry, i.e., 10 of them, 5 employees working in the collaborative economy and 5 users of the mobility service.

Document Analysis

Regarding the analysis, we primarily employ the approach of Document Analysis Method or DAM in short. We prioritize this methodology due to time constraint and limited budget. Instead of presenting a simple description of what happened, DAM is actually a practical and effective analysis of the motivation, intent, and purpose of a document within a particular historical context. DAM's importance is recognized and it involves various data. According to Winget (2005), the documents analyzed in qualitative research include all the documents related to the research, such as transcripts of interviews, written open-ended items on questionnaires, personal diaries, observation, and various forms of documentation. Wesley (2010) argued that even though quantitative methods provide relatively accurate and reliable results, but the data collection from the qualitative methods presents unparalleled paramount significance.

RESULTS

With the change of the French people's philosophy of life and habits of consumption, in correspondence with the technological innovation in wireless network and the application of mega data in the mobile payment system, shared travels have been accepted widely and gained tremendous popularity (Fagnant and Kockelman, 2014). Not only does the evolution of

shared mobility platform create new job opportunities, but it also boosts up the transport industry development. However, its expansion is not a path strewn with roses because there are many challenges found along the way, particularly when collaborative economy begins expanding on a large scale and has to cope up with an increasing world competition. The threat shared mobility exercised over traditional firms also impacts employment and social stability.

Influences of Shared Mobility

Strengths

Shared mobility is a new locomotion model, with several advantages (Bouton, Hannon, Knupfer, and Ramkumar, 2017), for instance:

1.   The implementation of mobile payment technology for an easy, quick, and simple payment. The first method is on-site terminal renting: when renting a car at a car rental station, if you control a service, the user can unlock it with a smart card or an NFC device. The second method is users can rent vehicles via smart phone applications.

2.   In terms of environmental protection, the bulk of shared cars and bikes should use exclusively electricity. This would improve environmental condition because shared cars and bikes hardly emit any polluting smoke. Simultaneously this can also stimulate the use of public transport means while decreasing the use of fuelled cars. Reducing the use of fuel and patrol may immediately lower the atmospheric pollutants and greenhouse effect gas emissions (Demailly, 2014), thus cutting down the overall consumption of carbon footprint and resources.

3.   Flexibility and practicality at renting is promoted. The accessibility of shared vehicles is 24 hours a day. Therefore, the travel time has become unlimited. Shared vehicles have solved the problems of mobility among office workers efficiently especially commuting to work in metro stations or bus stops at any given and at any required destination.

4.   Travelling conditions has greatly improved and traffic jams can be reduced. Shared transport can regulate the user rotation rate with the adequate supply of sharing vehicles and the suitable facilities, i.e., the improvement of the capacity of unity services and facilities should be in correspondence to the demand of users. By controlling the shared vehicles' supply, it may reduce the waste of shared vehicles, e.g., inactive in terms of resources, overuse of energy and the over-occupation of urban space, and most importantly it may satisfy consumer's needs in terms of mobility and reduce traffic jams.

5.   The cost of living for users can be reduced. Each user pays via renting shared cars, bikes or carsharing easily. This may lift some of the burdens from the shoulders of users.

6.   The expansion of shared vehicles promotes the development of vehicles manufacturing industry and increases job opportunities especially bicycles industry.

7.   The bulk of shared cars are advanced vehicles using sustainable energy sources. The expansion of shared cars will facilitate the modernization and revolutionize the traditional motor car sector. The traditional motor car makers would have to change in order to cope up with the trend. With the creation of innovative vehicles using new energy sources, the urge of establishment of the charging stations and other required facilities would be on the rise to meet the expansion of these high-tech vehicles. Therefore, this chain reaction of development will promote the creation of advanced vehicles and the installation of digital system and facilities. It will certainly increase their expansion and encourage the optimization of urban energy facilities.

Weaknesses

Most shared bikes need a permanent parking space and its flexibility is not great (Midgley, 2011). In a reserved space for renting bikes, the space is limited. If the rider wants to return the bike after use, there might be no more parking spaces left, it may be difficult to find a site where the bike terminal can still be used. Building this kind of system requires considerable funding. This includes the cost of the installation of the parking sites by the roads, i.e., a concrete-made anchoring terminal, an installed monitor screen connected to the network.

When people share "floating" bikes, they tend to turn a blind eye to the city management regulations so as to get the maximum comfort. Consequently, many bikes are parked disorderly. Some are even damaged. Many are broken to the extent that it can hardly be reused (Jiang, Ou, and Wei, 2019). In other cases, some bikes are even stolen. Once a bike is damaged, it must be returned and repaired by the service technician. Finding the problem vehicles quickly and precisely is very difficult, the shared bike firm had to pay a high cost for it. GoBee Bike has reported that more than 1,000 shared bikes were stolen or taken care of, about 3,400 shared bikes were destroyed and the personnel repaired about 6,500 bikes. It has to withdraw from the French market on February 24th, 2018 due to excessive vehicle damage.

Because of an imperfect supervision system and a lack of supervision of shared bikes and car sharing, there are hidden dangers on users' security. According to the prefecture of police, five cyclists were killed in the road accidents in 2008, six in 2009, two in 2010 and no death was reported in 2011.

In terms of profitability, though it created some advantages compared to the tremendous investment of capital, the profitability of bikes and shared vehicles is not high. In 2018, Bolloré Group announced the public service causes a loss of 50 million per year while the Autolib' and

Vélib' Métropole trade union voted for the cancellation of the contract (Reuters, 2018; Financial Times, 2018). On August 1st, 2018, the service was permanently shut down.

Car sharing requires a large parking space, which worsens the already crowded parking space problem in cities. Since a temporary shared car is not an individual's property, it will trigger off many bad phenomena, for instance, when a road accident occurs, the user and the car owner are incompatible and they don't fit in the conditions stated by the complaint framework of the insurance company, it will be difficult to identify the culprit in the occurrence of road traffic accident and the required legal responsibility bore by the culprit.

Development Opportunities and Threats

Opportunities

Collaborative economy has developed rapidly due to a huge transport demand. Shared mobility offers a great potential in the shared industry.

It is the expansion of internet technology and the popularity of mobile phones that forged a technical support for the promotion of shared mobility. The promotion and popularization of smart phones had made people possible to circumvent temporary restrictions depending on the use of computers to gain access online. Mobile phone portability is the melting point for both online and offline lives.

With the perfect construction of cycling routes in France, shared bikes can solve urban traffic jams and the problem related to the "last kilometer".

The traditional car industry has been in the process of modernization. The implementation of new energy sources in the latest designed vehicles is the major trend of the industry development. It opens up many opportunities for an unprecedented expansion of shared vehicles. Compared to traditional private cars, the advantage of shared vehicles lies in the fact that they use new energy sources and consume less. Citizens pay much more care to traveling modes which are short, environmentally friendly, efficient, flexible and healthy (France24, 2015)

The government policy supports mobility modes that protect and conserve the environment. The new mobility mode may promote new developments and ideas, creating new economic development opportunities. In the end, it keeps benefiting from state support for its development. On June 28th, 2018, Anne Hidalgo, Mayor of the City of Paris decided to consider the improvement of air quality, a great ambition of her policy (France24, 2015), she supported and promoted non-polluting traveling mode.

Threats

The biggest difference between the expansion of shared mobility and other types of mobile internet products is that the business of shared mobility benefited from a mass arrival of players on a short length of time (Bouton, Knupfer, Mihov, and Swartz, 2015). Emerging entrepreneurs, traditional firms and great internet corporation are totally involved in the competition for winning the shared mobility market (Wallsten, 2015). At present, the mobility market is very buoyant, the competition is too tough and eventually some firms went bankrupt. In the past, Autolib' was considered as a symbol of "the future of urban transport'' and urban modernization in Paris, representing mobile transport revolution. However, after going through a stiff competition, Autolib' suffered long-term losses, so it withdrew all the shared cars running in Paris before July 31st, 2018. Carmakers such as Renault, PSA group, General Motors, BMW and Daimler have the intention of participating in the shared service under the framework of "transforming Paris" to replace Autolib'.

Owing to a rapid emergence of the number of shared bikes, the government services could not provide the management service that was necessary for the shared bikes services. Therefore, many problems appeared in urban management.

Collaborative economy keeps on invading different domains. Its impacts are obvious including modify many traditional sectors, halt the development of traditional firms and narrow their development space. The traditional economy may have to encounter them without question. Shared mobility had affected the sector of traditional mobility and aroused dissatisfaction. Uber launched the Uber POP service in France and sparked the protestation among Parisian taxi-drivers (Katarzyna and Andreas, 2018). Finally, François Hollande ordered their dissolution. Uber suspended the service in France from July 3rd, 2015.

Shared mobility is very different from traditional economic models in terms of commercial model and work relations. Present laws and regulations still refer to the framework of traditional economic model and the legislative procedure is long (Inglese, 2018). The imperfection of laws and regulations provoked a gap in the law in terms of supervision and considerably delayed the development of collaborative economy and could not guarantee any legal protection to shared mobility development.

RECOMMENDATIONS FOR THE DEVELOPMENT OF SHARE MOBILITY

As a new type of transport and fast development model, shared mobility caused some problems in the framework of procurement contracts, urban environment and safe operation order, which consequently impacted on the development of the sector. The measurements to promote the sound development of the transport sector is worthy of our attention.

Recommendations for Users

Unacceptable behaviors such as damages caused by delinquents and spiteful thefts are frequent when people use shared bikes. There are various destructive behaviors, like crushing tires, ''unstuffing'' seats, removing chains, painting number plates and even directly throwing them into rivers or lakes. These disruptive actions create new challenges for the management of shared cycle firms and platforms. For instance, Hong Kong's Gobike officially stopped its operation in France on February 24th after the "mass destruction" of the bike fleet, which prevented it from continuing to operate; Goobe was deeply concerned about a thousand bikes that were stolen and 3,400 damaged. Shared bikes disposal or abandonment issues has become a major social problem. Most users concern only about their own convenience and comfort. It is a common phenomenon that there are discarded bikes parking disorderly on roads, at junctions and green areas. The situation will improve if the users behaved themselves and become sensitive about parking protocol and etiquette (Alpert, 2019; MetroBike, 2009). They should be more considerate and encouraged to be a responsible cyclist to give up any kind of misbehaviors. They should be educated to protect shared transports and stop vandalizing shared property in order to maintain a good operational order of shared mobility.

Recommendations for Shared Mobility Enterprises

Enterprises of shared cars and bikes should strengthen the management of rented cars, for instance, carry out inspections and maintenance of vehicles in regular basis, examine rented vehicles' performance and security, preserve the image of a clean and well-ordered car, improve the repairing and recycling procedures, with these management measurements, it would definitely ameliorate enterprises' operation and vehicles maintenance capacities and service quality (Li, Zhang, Sun, & Liu, 2018). There are also other alternatives, for instance, it is common that some enterprises cooperate with other operations and professional maintenance companies which provide charging, repairing, and cleaning facilities to their vehicles in order to give a better service to users with impeccable cleanliness, performance and security conditions.

It is reasonable that the manager of shared cars should create a distinct identification system to examine the validity of the documents provided by the tenant. This will prevent delinquents and vandals who are not in line with the requirements or whose identity is not known from using shared cars. This may efficiently reduce the potential risks for security in the industry.

Carsharing and shared bike enterprises should optimize the production conception and create their own competitiveness, rationally share the points out to increase the use rate, pay much more attention to relevant legal regulations to develop appropriate operational plans, improve the use of shared car and bike resources and reduce investment risks.

Enterprises should combine required technologies to increase the efficiency of the follow-up and supervision of shared bikes, shared parking and driving norms, institute a credit system, improve the positioning precision and better promote operators' promotion and development. To an expected extent, this may solve the problems stemming from the fact that present bikes are parked randomly and disorderly while disrupting the traffic.

The supervision system of carsharing industry offers supervision services of operations to urban industry management services, particularly the display of vehicles positioning, their itinerary, the search of special vehicles and other functions. For instance, the real-time location of the vehicle designated on the map, the real-time updating of the vehicle in motion. Enterprises should create an information sharing mechanism together with the public security service in order to better guarantee users' security and promote a sound development of the sector.

Enterprises should develop an autonomous driving technology, depending on artificial intelligence, visual displaying unit (VDU), radars, surveillance systems and global positioning system to control computers and vehicles automatically, without any human intervention for greater protection of passengers. In early 2015, Uber hired a certain number of researchers and created Uber Advanced Technologies Centre to develop autonomous vehicles. In March 2018, a testing performed on an American autonomous vehicle was temporarily suspended due to a traffic accident in the vehicle. In December 2018, after getting the local approval, Uber resumed the testing of its autonomous cars.

The online and offline combination forms a multi-faceted profit model in several domains. Quite obviously, a unique profit model makes the profitability of shared mobility enterprises difficult. Enterprises can adopt the online and offline 020 model to seek for more "profit points". For example, the offline connection model is profitable when advertising in bike parking areas, and the concept of shared bikes is extended from the transport domain to both tourism and fitness sectors. The combination of tourist spot planning and shared bikes will increase the tourist value of the site and will favor the profitability of shared bikes to create a win-win situation. It is also necessary to launch personalized services with added value for clients to offer a planning of bike itineraries, a team organization and a unique protection service.

Recommendations for the Government

The government should speed up the elaboration and improvement of the regulation applicable to travel sharing. In terms of access to the market, the market load capacity should entirely be evaluated in the strict observance of procedures. The government planning service should consider carefully about non-motorized parking areas and non-stop ones. In addition, the government should pay attention to shared cars, which is the future urban public transports development trend. Top class vehicle sharing may actually solve the main problems of cities like traffic jams. The development of shared vehicles is also important strategically for the integration of automobile industry with the environment protection and technological invention.

Policies should be correspondent with the problems of developing shared cars industry. For instance, the parking problems caused by the shared vehicles require a government active intervention (Manzi and Saibene, 2018; Ma, Lan, Thornton, Mangalagiu, and Zhu, 2018). In the main cities centers where there are few parking areas, priority is given to the parking needs of shared cars and the opening of public parking areas.

Meanwhile, the government should promote good users' behavior through advertisement in public services and voluntary activities and educate users in the improvement of their integrity and make them sensitive to good manners (Cohen and Kietzmann, 2014). The public security service should set up legal punishments for illicit actions such as theft, embezzlement of funds and destruction of shared bikes, as well as users who drive illegally and make arbitrarily stop in the road. The government should initiate policies aiming at sustaining the development of the shared mobility sector, for instance, reducing taxes paid by shared mobility enterprises. On November 26th, 2018, Élisabeth Borne, the French Minister of Transport, initiated a new bill on the traffic, dedicated to the creation of a carsharing platform and the development of shared car services.

DEVELOPMENT PERSPECTIVES OF THE SHARED MOBILITY INDUSTRY

Shared mobility plays an important role with the blooming expansion of collaborative economy in Europe. The value of transport transactions is estimated to 5,100 million euro, but the revenues of platforms were about 1,650 million in Europe in 2015. It means the sector of shared mobility has great development perspectives (Machado, Hue, Berssaneti, and Quintanilha, 2018) as exhibited in Table 1 as follows:

Table 1. Worldwide Bike sharing Programs

Country	Programs	Bicycles	Stations
Austria	3	1,500	82
Belgium	1	1,000	100
Brazil	2	232	26
Canada	1	5,000	400
Chile	1	50	10
China	3	61,400	2,518
Czech Republic	3	51	16
Denmark	3	2,513	277
Finland	1	300	26
France	22	36,443	2,936
Germany	3	6,069	128
India	1	100	6
Italy	16	3,392	361
Ireland	1	450	40
Luxembourg	2	370	40
Mexico	1	1,100	82
Monaco	1	10	2
Netherlands	1	--	200
Norway	1	1,660	154
New Zealand	1	175	11
Poland	1	100	13
Romania	1	100	10
Spain	21	11,080	842
South korea	1	430	20
Sweden	3	2,125	171
Switzerland	1	120	11
Taiwan	2	2,000	31
United States	1	120	10
United Kingdom	2	1,419	809
Total	**101**	**139,300**	**9,332**

Source: Shaheen, Guzman, and Zhang (2010)

Shared bikes might be the solution of the real problem of urban dwellers' trips: the choice of the traffic called the "last kilometer". When a city's road traffic gets overloaded and the distribution of rail traffic is congested, a section of the distance will remain a "few kilometers"

order of greatness. As a matter of fact, a flexible, practical and quick sharing of bikes gives users an alternative to complete the "last kilometer". This demand is increasing.

The emergence of a car sharing program and the growing popularity of the market are inevitable. They provide much comfort for people's daily trips, thus changing their ways of mobility and lifestyle (Shaheen, Zhang, Martin, and Guzman, 2011). Due to technical advantages, there is an increasing demand of rigid carsharing in the market. The congestion of the public buses, the overpopulation in underground stations had made the cost of daily distance to work to be very expensive. According to the projections of Digital Market Outlook of Statista, carsharing in general and programs in charge of putting users in touch like Uber, seemed to be on a roll. The turnover yielded by the sector should exceed 100 million dollars by 2022, for a number of users estimated to about 685 million worldwide.

While the number of cars is increasing, pressure from urban traffic also becomes intense, not to mention other factors like road congestion, limited parking spaces and the weak rates of carsharing. This provokes the demands of shared cars. The multi-party data show that the market of shared cars will experience a big rise in the future (Truffer, 2003). Moreover, car sharing has become a hot spot for many capital hunters. The data show that the number of shared cars increased from about 125,000 in 2015 to more than 1,3 million in 2020 exclusively in Europe (this figure includes B2C and P2P models) among them, as for France, it will have more than 250,000 shared cars.

The application of new energy resources and artificial intelligence has become the major development direction of the future automobile sector which gained wide acceptance from the world automobile sector. Automobile intelligence gives the best technical possibilities for improving and popularizing shared cars, and vehicles using new energy sources and advanced technology constitute the best conveyor of automobile intelligence (Shaheen, Chan, Bansal, and Cohen, 2015). Car makers have the obvious advantages, the most important of which is the fact of enabling to economize the cost of buying or maintaining vehicles. Renault launched its vehicle sharing service, Moov'in, in Paris on Wednesday, October 10th, 2018. Vehicle makers that cooperate with automobile intelligence have become the leader of the shared mobility platforms (Machado, Hue, Berssaneti, and Quintanilha, 2018), which is the major trend of the industry development.

CONCLUSION

This study covers the current development of the French shared mobility industry, particularly the introduction of bike-sharing, car-sharing and carpooling services. It is obvious that the market of shared mobility has a great potential (Shaheen, Stocker, and Mundler, 2017),

but the competition is harsh and shared travels constitute an important asset. Presently, no profit model has been found, which caused difficulties for the functioning of the society. Many investors have already withdrawn from the market.

People consider that shared bikes are practical and efficient, but this also creates problems in urban administration (Akyelken, Banister, and Givoni, 2018). Considering high costs and competitive pressures, continued cooperation between different vehicle makers and shared traveling platforms will be a favorable tendency of the industry development. Shared mobility provides an opportunity for the transformation of traditional vehicle makers. Moreover, it also speeds up the integration of the automobile sector industrial chain. The strengthening of the cooperation will support vehicle makers cope with a complex and dynamic market environment. Carsharing has progressively become a development deviation (Shaheen and Cohen, 2013) despite of the fierce and abnormal competitiveness in the industry. However, it is certain that carsharing services could alleviate traffic jams, improve the urban environment and reduce traveling expenses. Recently, there are numerous carsharing programs in the market: for users, carsharing is permanently in tune with their requirements in terms of reasonable prices; enterprises involved may develop. All the enterprises of shared mobility should be able to compete with one another on an equal footing to promote the sound development of the sector.

Although this research focuses on the development of French collaborative economy, there are some limitations remain. The first limitation of this study is the methodology involving interview and document analysis to conduct this research. Some researchers view interview as an area of concern with the interview method associated to the wider social context of the relationship, mostly what Kvale (2016, p. 484) calls "the power dynamics" within the interview environment. The limitations of document analysis are that they may have "insufficient detail", "low retrievability" (not retrievable or retrievability difficult), and "biased selectivity" (Bowen, 2009). Therefore, it is advisable that future research be conducted using quantitative data, longitudinal studies, cross-sectional analysis, experimental studies, and comparative studies to better understand the development of collaborative economy in France. This may shed light on a possible avenue leading to a wider understanding of sharing economy in various contexts.

The second limitation of the study is the geographical location of the study area. Future studies should take into consideration other geographic locations, such as E.U. country members, China, the United Kingdom, to name a few in order to compare the expansion of collaborative economy in these countries.

The third limitation of this study is a relatively small number of sample sizes of participants interviewed. Therefore, the generalizability to the entire industry of sharing economy

should be done with caution. Therefore, future studies should further collect more data from various countries to improve the quality of the results.

Finally, the fourth limitation of this study is that it uses different types of sharing economy, such as automobile sharing, bikesharing and carsharing and other sharing services. Future studies should focus on a single collaborative economy to have a deeper understanding of the sharing economy in different countries.

Declaration of conflicting interests

Funding

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