**Promoting EVCARD’s Electric Vehicles Rental Service**

**to Users who Own Cars in Shanghai**

For

the Chief Marketing Officer of Global Car Sharing

Chunhua Huang

By

Enguang Shi

ENGL 301 Student

University of British Columbia

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No.555 Jinping Road

Shanghai, 200240

December 17, 2020

No.1200 ZiFeng Road

Shanghai, 200242

Dear Mr. Huang,

Here is my report “Promoting EVCARD’s Electric Vehicles Rental Service to Users who Own Cars in Shanghai”. The purpose of this report is to assess the feasibility of promoting EVCARD services for families with cars and provide a detailed solution, so as to decrease the emission caused by EVCARD’s services. For the urban environment, reducing carbon emissions will slow the greenhouse effect and improve air quality. For EVCARD, increasing users who own vehicles not only offers more profit opportunities but also reduces greenhouse gas emissions. Providing a contribution to reducing emissions is also more likely for EVCARD to receive state funding and social support. I hope that my report can have a positive impact on the future development of your company and contribute my own meager contribution to improving the environment in Shanghai.

My report mainly includes the following points:

1. Introduce the impact of EVCARD's emission sources and user behavior patterns on emissions

2. Introduce the data source and scope of the survey

3. Collect data and analyze the data to find the publicity content that can contribute to emission reductions

4. Analyze the advantages EVCARD has over private cars.

5. Summarize prudent suggestions for the future publicity strategy of EVCARD.

Thank you very much for your patience. I am very honored to have this opportunity to participate in the publicity decision of EVCARD. If you have any questions, please contact me by email samuelshi20@outlook.com or phone 13651904710.

Sincerely,

Enguang Shi

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# Abstract

Taking Shanghai EVCARD car-sharing company as the research object, this paper studies the feasibility of promoting EVCARD services to car owners and the potential contribution of this initiative to Shanghai's transportation emissions reduction. According to research, the emissions caused by EVCARD are mainly due to the increase in emissions from car-free users significantly surpassing the reduction in emissions from users who own cars. So this article focuses on studying how to effectively promote EVCARD to car owners. First of all, this article lists the advantages of EVCARD over private cars in its convenience, which is reflected in one-way trip, free parking and unlimited access to aerial roads. In order to explore the current EVCARD publicity strategy and what car owners consider the most effective as a publicity method, the questionnaire was sent to the Shanghai Car Owners Communication Wechat Group to collect questionnaire data. After analyzing the questionnaire data, this article finds that the advantages of EVCARD's unlimited access to aerial roads and free parking are ignored by the public, while the advantages of one-way trip are well known by the public. Therefore, this article finally concluded that the two major advantages of unrestricted access to aerial roads and free parking should be promoted more in advertising.

# Introduction

## Description of EVCARD’s emission issues

Since the main content of this paper is about how EVCARD’s publicity strategy can serve Shanghai’s traffic emission reduction, the introduction of this paper elaborates on my understanding of the impact of EVCARD on traffic emissions. This part comes from my graduation thesis, titled: Urban New Energy Shared Vehicles and Its Emission Reduction Effect Research Taking Shanghai EVCARD as an Example. The following content explains in detail how the carbon dioxide emissions of new energy vehicles are produced, and how the use of shared vehicles by car-owned and car-free families affects its corresponding emission impact.

### The energy consumption and emissions of electric vehicles

Electricity is a secondary energy source. Although hydrogen, wind and nuclear power have accounted for an increasing proportion of China's electricity generation in recent years, about 80% of its electricity is still generated by thermal power. Therefore, carbon emissions generated by burning fossil fuels are the main source of carbon emissions generated by electricity (Yan et al. 15).

Carbon emissions from vehicle usage are the sum of the two emission stages. The first stage is called WTT (well-to-tank), which refers to the energy and emissions consumed between the source of the fuel and the stage in which it is used. For example, the WTT emission of electric energy is the emission during the generation and transmission of electricity. The second stage is called TTW (tank-to-wheel), which refers to the energy and emissions consumed by the vehicle as it travels. The sum of the two is called WTW (well-to-wheel) emissions. Unlike conventional vehicles, electric vehicles have zero TTW emissions (Wang 21), while all emissions are concentrated in WTT emissions.

Ji (11) made a comparative study of electric vehicles and traditional cars in 34 major cities in China, and found that traditional cars have a greater impact on the environment and residents' health, because their emissions are closer to population centers. Electric cars, on the other hand, emit no emissions when they are driven, and the emissions are generated by power plants, further away from population centers. In addition, the difference range of CO2 emissions of electric vehicles (135-274g/km) is larger than that of conventional vehicles (150-180g/km).

A study in the Irish context used the current model ratio as a base case to predict the total emissions when electric cars accounted for 100% of the model size. The results show that if trips below 15 km or the first 15 km of longer trips are assumed to be intra-city trips, the use of electric vehicles can significantly reduce the greenhouse gas emissions from intra-city driving, while the reduction is even less significant for inter-city trips (William J. Smith 10).

### The impact of car-sharing behavior patterns on emissions

Some car-sharing research has highlighted the impact of car-sharing services on family behavior patterns. For example, the impact on total mileage of private cars, other authors highlight changes in family car ownership patterns and alternatives to local public transport.

In travel behavior, carbon emissions are reduced when more fuel-efficient Shared vehicles replace private vehicles. When car-sharing takes the place of public transport, carbon emissions increase. In addition, car-sharing will have an impact on the convenience and preference of families, making their travel frequency and distance change. The study in South Korea also shows that the increase of fuel car sharing vehicles does not make a significant contribution to carbon emission reduction, while the increase of EV infrastructure such as charging stations can significantly reduce the total carbon emission of future EVs (Jung 18).

A North American study, based on online surveys, found that car-sharing among families with cars led to a reduction in carbon emissions, while car-less families led to an increase in emissions. Most of the households that use Shared cars increase their carbon emissions by using them, while the rest of the households reduce their carbon emissions by reducing the number and use of vehicles. However, as car-sharing enables its users to develop a new type of "low-mileage" travel mode, the total emission reduction effect ultimately exceeds the total emission increase effect. And not all car-sharing members are active. Therefore, it is not recommended to apply the same emission factor comprehensively to every member (Elliot W 21).

The four factors that affect the carbon emission of Shared cars include the change of transportation mode, the old and new vehicles, the choice of the best model and the integration of travel. The shift in transportation patterns refers to the use of Shared cars instead of other modes of transportation. Old and new vehicles mean that car-sharing services will be updated at a higher rate than family vehicles (about three years), and that the overall newer models will bring higher fuel efficiency. The selection of the best model means that cars can be Shared and different models can be provided so that families can choose the model that best suits their travel needs. Gas-guzzling cars will be used less. Travel integration refers to the fact that due to the characteristics of Shared cars, users are more inclined to integrate shorter multiple trips into longer single trips, in which repeated round trip is avoided and the engine is kept in warm starting state for a longer time, thus saving fuel consumption (Namazu 25).

Car sharing helps improve urban transport efficiency and mobility, reducing the number of cars per capita, reducing the need for parking Spaces, reducing fixed costs and supplementing public transport. In addition, car sharing helps reduce negative energy and environmental impacts. Electric or petrol-electric hybrid vehicles are widely used in car-sharing services due to their energy efficiency and compatibility with charging stations and drop-off points. A case study in Lisbon, Portugal, found that introducing hybrid and electric cars to car-sharing services could reduce energy consumption by 35% and electric cars by 47%, respectively, resulting in a 35% and 65% reduction in carbon emissions. (Baptista 20).

## Purpose of this report

A study I conducted in the past showed that EVCARD services have huge potential for reducing emissions from urban traffic. However, according to current data calculations, EVCARD has increased Shanghai's total traffic emissions. Based on quantitative research, I found that the reason for this result is that the majority of people using EVCARD in Shanghai are car-free families. The proportion of car-owned households using EVCARD to replace traditional fuel vehicles in their homes is very small, resulting in the increased emissions of car-free households far exceeding the reduced emissions of car-free households.

The purpose of this report is to assess the feasibility of promoting EVCARD services for families with cars and provide a detailed solution, so as to decrease the emission caused by EVCARD’s services. For the urban environment, reducing carbon emissions will slow the greenhouse effect and improve air quality. For EVCARD, increasing users who own vehicles not only offers more profit opportunities but also reduces greenhouse gas emissions. Providing a contribution to reducing emissions is also more likely for EVCARD to receive state funding and social support.

Specifically, first of all, I will evaluate whether it is attractive to families with cars based on the specific content of the EVCARD service. Secondly, I will evaluate whether the content of advertising and promotion of these services has the potential to increase the proportion of people with cars, thereby reducing emissions more effectively.

# Data Collection and Analysis

## Brief Description of Data Sources

The theoretical basis of this report comes from the graduation thesis I wrote when I was an undergraduate at Shanghai University. The theoretical basis includes how the EVCARD service affects Shanghai’s total traffic emissions, and how the specific service content of EVCARD attracts people with or without cars. This report evaluates the feasibility of promoting specific service content through the online questionnaire collected by me in November 2020. My questionnaire was distributed to the Shanghai Car Owners Communication Wechat Group in Shanghai, and a total of 589 questionnaires were distributed. After excluding invalid answers, there are 472 valid questionnaires remaining. It is worth noting that the family members in the group have at least one traditional fuel car. Please refer to Appendix for the specific content of the questionnaire.

## Scope of The Inquiry

To assess the feasibility of promoting EVCARD services for families with cars. I plan to design my questionnaire to pursue these inquiries:

1. Proportion of people with cars who know about EVCARD services

This indicator can be used to analyze the current overall exposure of EVCARD to people with cars.

1. How do people with cars know the existence of EVCARD services?

This indicator can be used to analyze the focus of EVCARD's current promotion and the different effects of different promotion methods. In addition, this indicator can also be used to analyze how EVCARD can enhance publicity.

1. Proportion of people with cars who know EVCARD who have used this service.

This indicator can be used to intuitively show how many strangers can be converted into users by EVCARD’s current publicity methods. In order to understand the effectiveness of its advertising from the side.

1. Reasons for people with cars to use EVCARD

This indicator can clearly show the reasons why EVCARD attracts some people with cars, thus reflecting the advantages of EVCARD services for traditional private cars, and enabling EVCARD to more accurately determine the need for advertising. Propaganda advantage.

On the other hand, the reason why it accounts for more of this problem may be the well-known advantages of EVCARD, and there is no need to spend a lot of extra cost for publicity.

1. Reasons why people with cars do not consider using EVCARD

This indicator can clearly show the reasons why EVCARD does not attract some people with cars, thus reflecting the disadvantages of EVCARD services for traditional private cars, so that EVCARD can determine more accurately in the following article Need to avoid content in advertising, and improve your products based on these disadvantages.

In addition, this indicator can also reflect the content that EVCARD may ignore in advertising. Because people do not know the potential advantages of EVCARD, they may also consider not using EVCARD.

1. After enumerating the advantages of EVCARD over traditional fuel vehicles, will people with cars who originally did not consider EVCARD consider using EVCARD more?

This indicator and the previous indicator can jointly reflect the advantages of EVCARD that need to be highlighted in the following publicity. And this indicator can also more intuitively reflect which advantages people who do not consider using EVCARD are not familiar with.

1. Are EVCARD's advertisements attractive?

This indicator can reflect the creativity of EVCARD's current advertising and whether it is easy to remember.

1. What content in EVCARD advertising can impress people?

This indicator can reflect the more successful part of EVCARD's current advertising. By understanding the successful part, you can know what needs to be promoted in the future.

## Advantages of EVCARD

Due to its special characteristics, shared cars have some advantages that private cars do not have. According to my previous research, I summarize its advantages into the following four points.

1. One-way trip scenario
   1. **Airport and other long-term travel departure points**

When people need to change a vehicle that cannot be replaced by a car, and the return time is unknown, parking a private car at the place where the vehicle is changed will result in very expensive parking fees. The most intuitive example is taking an airplane. When people need to go to the airport to take a plane, they generally do not choose to park their private car in the airport parking lot, but choose to let others pick up and drop off, or use public transportation. In this case, using EVCARD can bring great convenience. First of all, the unit price of EVCARD is lower than that of taxis, and its convenience and comfort are higher than that of public transportation such as buses and subways. In addition, using EVCARD also saves the trouble of needing others to pick up and drop off.

* 1. **Leaving and returning home by different transportation**

A common example is that many people who drive private cars to work need to drink after get off work, in which case they cannot drive home. So they can choose to borrow and return the EVCARD service when they go to work, and take public transportation home.

1. “EVCARD only” parking spaces with no parking fee
   1. **Number and coverage of these parking spaces**

EVCARD has many free parking spaces and charging piles in various districts and counties of Shanghai, which are generally set up in paid parking lots. For situations requiring long-term parking, this is a very attractive advantage.

1. Free entrance into the aerial roads
   1. **Rules of banning licenses in Shanghai due to traffic jams**

Shanghai uses rules of banning licenses to solve the congestion problem of urban aerial roads. The licenses of EVCARD have the highest authority and will never be banned.

* 1. **The importance and necessity of entering aerial roads when driving in Shanghai**

Shanghai's urban areas are densely built and densely populated, so surface roads cannot carry all the traffic. Moreover, ground transportation is also affected by traffic lights, which brings a lot of inconvenience to car travel. So driving in Shanghai is basically unavoidable to use aerial roads. This brings many necessities to the use of EVCARD services.

1. Switching to an environmentally friendly living style with low costs
   1. **Contribution of electric vehicles to emission decrease**

For travel using fuel vehicles, using electric vehicles is more environmentally friendly.

* 1. **Cost-effectiveness for people having a low demand for driving**

Under the circumstance that high-frequency use of cars is not required, the rent for occasional driving trips is lower than the maintenance and fuel costs of traditional cars. In this case, people with cars can consider selling their fuel cars to use EVCARD services.

## Analysis

1. The survey shows that 92% of people with cars have heard of EVCARD, which means that the publicity of EVCARD is very high.

Figure 1

1. The survey shows that the most people know about EVCARD through other means. According to the author's own experience, the most common situation when I see EVCARD in daily life is to see someone else using an EVCARD vehicle on the road, or to see an EVCARD charging pile in a parking lot. In addition, many people have heard of EVCARD through the word of mouth, which shows that the actual use of EVCARD has a great role in promoting its promotion. The last item is advertising, which is lower than the author's expectations, but the proportion still accounts for about one-fifth.

Figure 2

1. Outdoor advertisement facilities occupy a large part of the advertising location, the second place is by other means, and finally website advertisement. I guessed that TV advertising took up a large part of other means.

Figure 3

1. Almost three-quarters of people with cars have not used EVCARD, which shows that there are still many potential users that can be obtained through enhanced publicity. This indicator also shows that it is necessary to strengthen the promotion of EVCARD services not only in terms of emission reduction but also in terms of commercial benefits.

Figure 4

1. More than half of the existing users of people with cars use EVCARD because it is convenient for one-way trip, followed by free parking, and only about one-tenth of users because EVCARD license plates can be freely on the aerial roads. Almost no one chooses EVCARD because of environmental protection. In this way, the advantages of one-way trip are the most recognized and well-known. Only 1% of other people were selected, indicating that the reasons listed in the questionnaire are more comprehensive.

Figure 5

1. Although most car owners who do not use EVCARD claim that their private car has met all their needs, more than one-third of the people said they don't know the characteristics of EVCARD. Some people say that although private cars do not meet all their needs, EVCARD is too expensive for them. Few people think EVCARD is not convenient enough. This shows that we can promote the convenience of EVCARD, so that people who do not understand the characteristics of EVCARD can learn more about the EVCARD service and try to use it.

Figure 6

1. Many people with cars who have never used EVCARD said that they would use EVCARD because the EVCARD license plate is not restricted to aerial roads. Similarly, free parking is also a reason to encourage them to use EVCARD. Since EVCARD is very convenient for one-way trip and has been well known by many people, this will not change the thinking of most people who do not use EVCARD. The factor of environmental protection is not only neglected among people who use EVCARD, but also among people who have never used EVCARD.

Figure 7

1. Obviously, most people think that EVCARD's current advertising cannot attract people with cars. This shows that the current advertising does not promote people with cars as their core users. However, this indicator also allows us to see the potential of attracting people with cars in the future.

Figure 8

1. It can be seen from this question that currently EVCARD mainly promotes the environmental protection of its services in its advertisements, followed by its convenience for people without cars. Then it can save money. Only 20% of people think that EVCARD's advertisement has elements that make people with cars feel convenient. However, according to previous questions, it is found that environmental protection is the least attractive factor for everyone to use EVCARD. And if you want EVCARD to reduce more emissions, what you should focus on is its portability for people with cars.

Figure 9

# Conclusion

This article draws conclusions based on the negative contribution of EVCARD to Shanghai's emission reduction effect and the impact of EVCARD use by different groups of people on its overall emissions, indicating that EVCARD needs to have more car users to make more contributions to emission reduction. It also analyzes the advantages of EVCARD over private cars, the shortcomings of the current propaganda model and the feasible direction of the future propaganda model. The conclusion is that if you want to attract more people with cars, EVCARD should pay more attention to the convenience that it can bring to people with cars. Among all the convenience factors, the one that most motivates people with cars to start using EVCARD is that EVCARD’s license plate will not be restricted to aerial roads, followed by EVCARD’s free parking lot. The advantages of One-way trip are already well known, so no additional publicity is needed. Therefore, this paper suggests that EVCARD companies can consider adding to the advertising the non-restrictiveness of its license plates and the economical trait of parking, so as to bring more contributions to urban emission reduction.

# Appendix





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