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The Analysis of China's New Energy Vehicle Industry from the Perspective of Status Quo Bias

Daiyue Wang[1,a,*]

[1]*College of Social Sciences, University of Birmingham, Birmingham, B15 2TT, United Kingdom*
a. 20210090@ntit.edu.cn
**corresponding author*

Abstract: Based on the background that the national automobile industry is gradually turning to new energy vehicles, this paper mainly takes the sales of new energy vehicles and traditional vehicles as the research object. This paper combs the existing research literatures through comparative analysis, analyses the new energy cars' industry and market using the relevant data and chart analysis methods, finds that the sales of new energy vehicles have experienced a rapid growth in recent years. But more consumers still choose fuel vehicles due to status quo bias, while the sales of fuel vehicles have begun to decline since 2019. The findings of this study are that new energy vehicles are the trend of development of cars in future, and the experiences of using new energy cars are also getting better, but there are still some ways to help consumers choose to buy new energy vehicles more quickly like building more charging facilities.

Keywords: status quo bias, new energy vehicle, charging market

1. Introduction

In recent years, more and more countries have begun to develop new energy vehicles industry, and many automobile enterprises have also begun to invest in new energy vehicles. According to the data in 2022, the production and sales of new energy vehicles in China are both exceeded 6 million, which increased 94.3% compared to the data in 2021[1]. Not only in China, but also in the world, the sales of new energy vehicles have increased significantly, the global sales of electric vehicles exceeded 3 million in 2020 [2].

To satisfy the growing charging demand of new energy vehicles, China is also vigorously developing the construction of charging piles and charging stations. While more refined charging services would make more traditional energy vehicles consumers dispel their worries about the inconvenience of energy supplement of electric cars. In 2021, China's charging infrastructure will grow rapidly. According to the data released by the China Electric Vehicle Charging Infrastructure Promotion Alliance, the number of China's charging infrastructure will increase by 936000 units in 2021, by the end of 2021, the charging infrastructures in nationwide has reached 2.617 million units [3].

The market of new energy cars has experienced a development about 10 years and has taken off in the last three years. This study attempts to find out the reasons why the new energy car's market took off and find out how to maintain or continue to grow and will describe the situation of the new energy vehicle market in recent years and what factors affect people's consumption choices. For

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example, why is the sales of new energy vehicles still less than the sales of traditional energy vehicles after getting many investments and government subsidies, and what role does the status quo bias effect play. Moreover, this study would give some suggestions about how to improve the sales of new energy cars in the end, which also means how to get out of this state quo bias.

2. Literature Review

Status quo bias is that people are still holding their decisions they made before or kept things unchanged when other conditions changed even people could be benefited by new conditions [4]. In terms of choosing whether to buy new energy vehicles, the status quo bias for consumers is that consumers still choose to buy gasoline vehicles even with many supports from government policies and the extreme low running costs of new energy vehicles. Although petrol vehicles have traditional advantages, such as long range and fast energy replenishment, however today, most countries have new plans for the use of energy, and energy conservation and emission reduction have become a consensus [5]. According to Ding Pei, there are some influences that affect consumers deciding whether to buy new energy cars, which are economic subsidies, weather, noise control, acceleration performance, battery and charging infrastructure [6]. Research on influencing factors of new energy vehicle sales based on online reviews, a study about new energy vehicle market, collected online review data about new energy vehicles by using web crawler technology, which concluded 129 samples of new energy vehicles sold in 2021, by using text mining and empirical analysis to tell the influences which effect the sales of new energy vehicles.

For example, in the aspect of economic subsidies, the proportion of new energy sales is positively correlated with the number of applying for tax-free models during 2012-2017 [7]. Research on the impact of the purchase tax exemption policy of new energy vehicles on the sales of passenger vehicle enterprises, a study about the purchase tax of new energy vehicles, explained profoundly how the policy affected the sales of new energy vehicles, but also studied and pointed out how some policies were taken advantages by some entrepreneurs. These entrepreneurs are seeking for nothing but only profits during that period, hence some subsidies were not gone into consumers. Fortunately, the later policies became more targeted and detailed. In June 2022, the market share of new energy vehicles has been closed to 24% in China, which had a significant increase from 4.52% in June 2020 [8].

3. Industrial and Market Analysis

3.1. Developmental Prospect and Policy Support

There is an increasing willingness in consumers to purchase new energy vehicles with lower running costs and strong policy supports. Under the condition that environment is getting worse, governments increasingly want to get rid of non-renewable energy, especially oil [9]. Also, the development of new energy vehicles is extremely important for enhancing the competitiveness and influence of China's automobile industry.

Therefore, there are lots of strong policies to support for new energy vehicles. For example, in Shanghai, the price of electric for car charging has discount. If someone buy an old car registered in Shanghai, or the owner bought a new electric car from an auto sales agency registered in Shanghai Market Supervision and Administration Department, the municipal government would give 10000 yuan to the individuals in a one-time allowance.

Figure 1 shows that sales of new energy vehicles have grown by leaps and bounds over the last three years, while the sales of traditional cars were starting to decrease since 2019.

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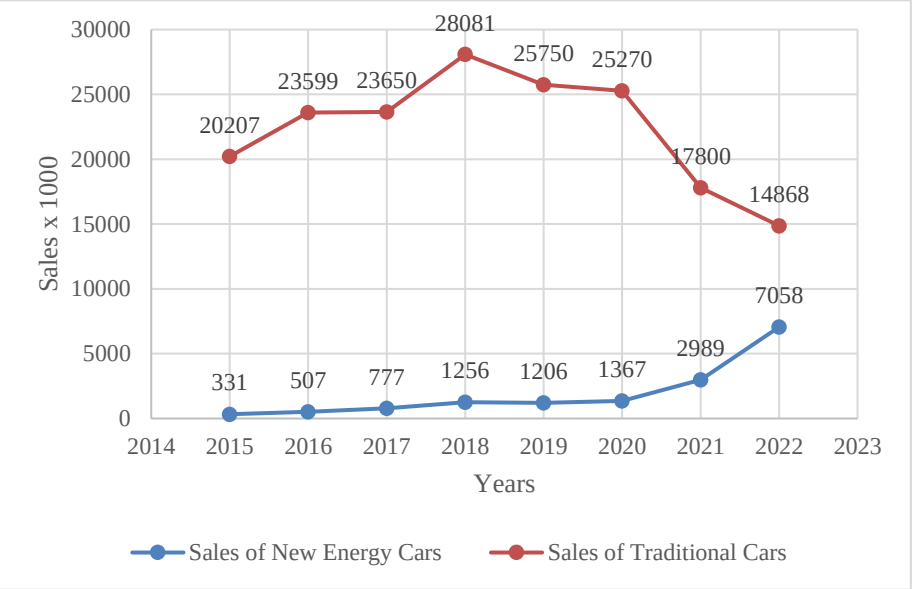

Figure 1: Sales of two types of cars.

3.2. Market Analysis

The market share of new energy vehicles in Shanghai is still less than traditional cars (the market share of new energy vehicles had about 46% in 2022) [10]. In the meanwhile, according to the statistics from China Passenger Car Association, China's car market share of new energy vehicles was only 27.6% in 2022. As for the supporting facilities, there are not many charging stations cover the whole country. Statistics reveals that the number of charging station is around 36000 in China until 2019, though the number is growing rapidly. Most charging piles and stations are arranged in economically developed areas, which leads most new energy vehicles in other cities rely on their own charging piles in home. Also, the weather is very cold in north, the driving range of new energy vehicles is greatly reduced.

Compared to the advantages of traditional cars, petrol cars only need several minutes to do a power supplement, usually the time to fuel a tank of passenger car form empty to full is within 5 minutes, and the car get range about 1000km, but an electric car charging for 5 minutes could go only 100 -200km, and most Chinese family could only afford one car and they need to consider the convenience to drive further. So, with those very strong policies benefit to encourage people buying and using new energy cars recent years, most people are still willing to buy traditional cars with two years of petrol price raising up and the sky-high plate cost (100000 yuan for a plate for petrol car in Shanghai).

There is something to be happy is that the average price of new energy vehicles has become more expensive. It is known that most new energy car's brands are relatively low-end in the past, but now luxury brands are everywhere in the market, and people are willing to pay more to buy a new energy car [11]. Because new energy cars are getting better performance, more stable qualities and using more technologies after these years, which makes consumer's experiences better so that the vehicle itself can bear a higher selling price.

3.3. Suggestions

Ding et al. pointed out that there are some factors effect consumers whether to buy a new energy car, which included economic subsidies, weather, noise control, acceleration performance, battery and charging infrastructure [6]. From these aspects, the study also encourages automobile enterprises to

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spend more money on research and development to make the car could go further, be safer, be more comfortable; also, car enterprises and government could invest more charging stations to make sure consumers have sufficient charging piles. With these two methods, it is like to maintain the sales of new energy vehicles at least. In the early stages of the development of new energy, it is necessary to make people experience the benefits and advantages of new energy vehicles so that more consumers would be willing to choose new energy cars. For example, letting people to charge new energy vehicles more conveniently and making people use electricity to charge at a lower price.

However, in fact, traditional cars are not the opposite to new energy cars, different kinds of cars have its own advantages. New energy cars cost lower compared to petrol cars, while traditional cars are more convenient for someone who is often driving on highways. Both type of cars could work well as long as consumers buying what suits for the demands.

4. Conclusion

The new energy vehicle industry had a rapid development in the last years, more and more new energy vehicles were chosen by consumers. At the same time, China has also been supporting the construction of charging stations and other infrastructure in the past five years, made better experiences for consumers who chosen to drive new energy vehicles. But even though the quality of new energy vehicles has improved greatly in recent years, more consumers are still choosing traditional fuel vehicles because of status quo bias. At this stage, there is still a huge gap for improvement in the sales of new energy vehicles compared to the sales of fuel vehicles, but now that mainstream is to phase out fuel vehicles, the direction of development in new energy industry is certain. Europe, for example, has recently announced that selling of all models of fuel cars would be stopped, whether petrol or diesel, by 2035.

In a word, to make consumers switch to new energy vehicles more quickly, there is still a need for automobile companies to develop newer technologies which could be using in new energy cars, and it is necessary that government to build more charging stations to make charging more convenient for consumers. Also, the increasingly strict policy on fuel vehicles helps automobile companies to focus on new energy vehicles earlier and faster.

However, this paper has reserved opinions about to completely abandon fuel vehicles, because at least at this stage, there is only a remote chance that some suddenly appeared technology can make the charging speed of new energy vehicles become extremely fast. So, when driving in long distance or in a cold weather, fuel vehicles have great advantages over new energy vehicles in terms of endurance.

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