

# Analysis of Competition Between New Energy Vehicles and Traditional Fuel Vehicle Industry

Li Huaijing, Gao Chang, Guo Zishuo, Li Xinrui, Li Zhuobin

School of Statistics and Data Science, Beijing Wuzi University, Beijing, China

## ABSTRACT

This study conducted a questionnaire survey to analyze in depth the industry competition situation between new energy vehicles and traditional fuel vehicles. Organize and draw tables based on the collected data, and analyze the table data in detail. Analyze the competitive relationship between the two from multiple aspects such as consumer cognition, vehicle performance evaluation, and purchasing tendency. Finally, summarize the research results based on the analysis results, and provide reference for the development of the automotive industry.

**KEYWORDS:** car Analysis of Industrial Competition market trends

**How to cite this paper:** Li Huaijing | Gao Chang | Guo Zishuo | Li Xinrui | Li Zhuobin "Analysis of Competition Between New Energy Vehicles and Traditional Fuel Vehicle Industry" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-8 | Issue-6, December 2024, pp.673-675, URL: www.ijtsrd.com/papers/ijtsrd71622.pdf



Copyright © 2024 by author (s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



## 1. INTRODUCTION

With the increasing global attention to environmental protection and sustainable development, the new energy vehicle industry is rapidly rising, posing increasingly severe challenges to the traditional fuel vehicle industry. Understanding consumers' views, demands, and competitive situation between new energy vehicles and traditional fuel vehicles is of great significance for the planning, development, and policy-making of the automotive industry. This study aims to reveal the current situation and trends of new energy vehicles and traditional fuel vehicles in market competition through questionnaire surveys and data analysis.

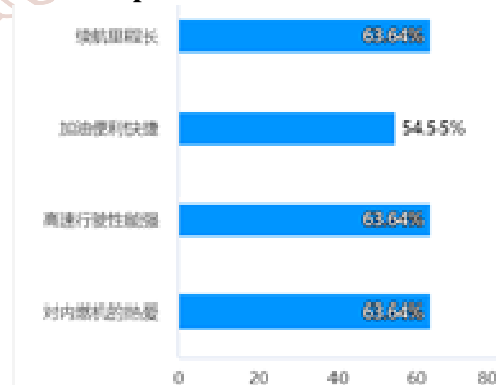
## 2. Design and Implementation of Questionnaire Survey

This questionnaire survey covers multiple aspects of consumers' opinions on vehicle performance, ease of use, purchase intention, etc. A total of 45 valid questionnaires were collected. The survey targets consumers of different ages, genders, occupations, and regions to ensure the representativeness of the sample.

## 3. Data organization and table drawing

A. Consumer perception of vehicle performance advantages

### Choose a fuel powered vehicle



### Analysis Conclusion:

Among the reasons for choosing fuel vehicles, long range, strong high-speed driving performance, and a love for internal combustion engines account for 63.64%, indicating that consumers attach great importance to fuel vehicles in terms of range and performance. Meanwhile, the reason for convenient and fast refueling also received 54.55% support,

indicating that consumers have certain expectations for the convenience of refueling when using fuel vehicles.

**Improvement suggestions:**

Regarding the range and high-speed driving performance, car manufacturers can further improve the technology of fuel vehicles to enhance their power performance and endurance, meeting the needs of consumers.

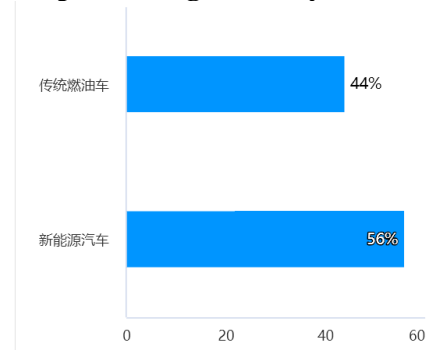
B. In terms of refueling convenience, cooperation with gas stations can be considered to provide more convenient refueling services, such as mobile payments, appointment refueling, etc., to enhance user experience.

C. For the love of internal combustion engines, marketing activities can be used to strengthen consumers' identification with the culture and performance of fuel vehicles, attracting more target customer groups.

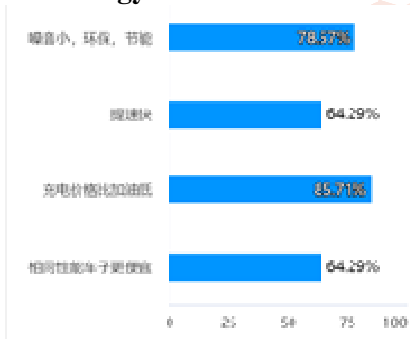
of new energy vehicles, and attract more potential users.

C. In terms of improving the performance of new energy vehicles, manufacturers can increase their technological research and development efforts to enhance the vehicle's acceleration performance and cost-effectiveness, meeting consumers' expectations for performance.

**Consumer purchasing tendency**



**Choose new energy vehicles**



**4. Data analysis**

**A. Cognitive analysis of performance advantages**

**a. Range**

From the data, it can be seen that the proportion of traditional fuel vehicles with long range in consumer perception is relatively high, reaching 63.64%, while the proportion of new energy vehicles is 54.55%. This indicates that traditional fuel vehicles still have certain advantages in terms of range, but the range capability of new energy vehicles is gradually being recognized by consumers, and the gap between the two is narrowing.

**Analysis Conclusion:**

According to data analysis, the advantages of purchasing new energy vehicles mainly focus on charging prices and environmental performance. Among them, 85.71% of the respondents believe that the lower charging price compared to refueling is a major advantage of new energy vehicles, while 78.57% of the respondents are concerned about their low noise, environmental protection, and energy-saving characteristics. In addition, 64.29% of respondents believe that new energy vehicles have faster acceleration and are cheaper for vehicles with the same performance, indicating that consumers also have some recognition of the performance and economy of new energy vehicles.

**b. Convenience of use**

Convenient and fast refueling is a major advantage of traditional fuel vehicles, which 63.64% of consumers agree with, while the advantages of new energy vehicles in this regard are not obvious. This reflects that the construction of infrastructure such as charging stations still needs to be strengthened to improve the convenience of using new energy vehicles.

In terms of high-speed driving performance, traditional fuel vehicles also lead new energy vehicles with a 63.64% advantage, indicating that consumers have more confidence in the performance of traditional fuel vehicles in high-speed scenarios.

**Improvement suggestions:**

A. Regarding the advantage of charging prices, the construction and promotion of charging facilities can be further strengthened to ensure that users enjoy more convenient services during use.

B. Strengthen the promotion of environmental protection and energy conservation, enhance consumers' awareness of the environmental value

**c. Environmental Protection and Economy**

1. New energy vehicles have significant advantages in terms of low noise, environmental protection, and energy efficiency, with 78.57% of consumers recognizing this, which is consistent with the zero or low emission characteristics of new energy vehicles. Meanwhile, 64.29% of consumers believe that charging prices are lower than refueling, and 85.71%

think that cars with the same performance are cheaper, indicating that new energy vehicles are attractive in terms of long-term usage costs and cost-effectiveness.

The advantage of fast acceleration of new energy vehicles has also been recognized by 64.29% of consumers, which has a certain competitiveness in terms of power performance compared to traditional fuel vehicles.

### **B. Purchase tendency analysis**

Although traditional fuel vehicles still hold a certain market share, the purchasing tendency of new energy vehicles has reached 56%, showing a trend of surpassing traditional fuel vehicles. This indicates that consumers' acceptance of new energy vehicles is constantly increasing, and the market prospects are broad.

### **5. Summary**

Through this survey and research, it was found that new energy vehicles and traditional fuel vehicles have their own advantages and disadvantages in industry competition. Traditional fuel vehicles have certain advantages in terms of range, refueling convenience, and high-speed driving performance, while new energy vehicles have outstanding performance in environmental protection, energy conservation, cost-effectiveness, and power performance.

With the continuous advancement of technology and the improvement of infrastructure, the disadvantages

of new energy vehicles are expected to gradually improve. For example, the increasing range and more reasonable layout of charging stations will further enhance its market competitiveness.

For automobile companies, they should plan their product layout reasonably based on consumer demand and market trends. Traditional fuel vehicle companies can increase their research and development investment to improve the energy-saving and environmental performance of fuel vehicles; New energy vehicle companies need to continue optimizing vehicle performance, strengthen infrastructure construction cooperation, and improve user experience.

The government should also play an active role in industrial competition by formulating relevant policies, such as subsidizing the research and production of new energy vehicles, increasing investment in charging pile construction, etc., to guide the automotive industry towards sustainable development and promote healthy competition and coordinated development between new energy vehicles and traditional fuel vehicle industries.

In the future, the competition between new energy vehicles and traditional fuel vehicles will become more intense, and both sides need to constantly innovate and improve to adapt to market changes and consumer demands, and promote the progress of the entire automotive industry.