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# New Thinking and Logical Exploration of Automobile User Experience Theory in Consumer Research

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## Abstract

**With the rapid development of automobile industry and the increasing diversification of consumer demand, automobile user experience has gradually become a key factor affecting consumers' purchase decision. This study adopts qualitative and quantitative research methods, and comprehensively collects and analyzes user data through questionnaires, in-depth interviews and field observations. This paper puts forward a brand-new thinking and logic of automobile user experience, emphasizing the real expectation of automobile products from the actual needs of users and running through the whole life cycle of automobiles. Through empirical research, this paper reveals the key factors of automobile user experience and their relationship, and points out the direction that automobile manufacturers should pay attention to in improving user experience. Specifically, automobile manufacturers should pay attention to the balance between vehicle performance and comfort, continuously optimize the performance of intelligent driving assistance system, improve the noise control level, and reduce the operation and learning cost of in-vehicle infotainment system. This study provides valuable market insight for the automobile industry and helps to promote the continuous innovation and development of the automobile industry. By paying attention to the experience of automobile users, automobile manufacturers can better meet the needs of consumers, enhance their satisfaction and loyalty, and thus stand out in the fierce market competition.**

## Keywords

**Consumer Research; New Thinking; Logical Exploration; Automobile User Experience Theory.**

## 1. Introduction

In today's society, the automobile industry is undergoing unprecedented changes. With the progress of science and technology and the increasing diversification of consumer demand, cars are not only simple means of transportation, but also an important symbol of showing personal taste and pursuing quality of life [1]. In this context, automobile user experience gradually highlights its importance and becomes a key factor affecting consumers' purchase decision.

However, despite the increasing attention to technology and design in the automotive industry, the in-depth study of user experience is still insufficient. Traditional consumer research often focuses on product function and appearance design, ignoring the actual feelings and needs of users in the process of use. The limitation of this research perspective makes it difficult for automobile manufacturers to accurately grasp the real thoughts of consumers, which further affects the market competitiveness of products [2-3].

In order to make up for this research gap, this paper intends to use the theory of automobile user experience to explore new thinking and logic in consumer research. The purpose is to reveal the key factors of automobile user experience through in-depth analysis of consumers'

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actual needs and use feelings, and to provide targeted improvement suggestions for the automobile industry. This research will not only help to improve consumer satisfaction and loyalty, but also provide valuable market insight for automobile manufacturers to promote the continuous innovation and development of the automobile industry.

## 2. Research Method

### 2.1. Research Design

In order to explore the real experience of specific brand car users comprehensively and deeply, this study adopts a comprehensive research method combining qualitative and quantitative methods. Through questionnaire survey, in-depth interview and field observation, the real feelings and needs of users are captured and analyzed from multiple dimensions.

In order to obtain comprehensive and in-depth data, this study designed a detailed questionnaire containing 40 questions for the target brand car users. The content of the questionnaire not only involves the user's satisfaction evaluation of automobile performance, comfort and safety, but also includes the user's perception of after-sales service and brand image. Send the questionnaire link to the target user group through the online questionnaire platform. Among the users who filled in the questionnaire, 20 users who were willing to participate in in-depth interviews were screened out. These users will cover different age groups, professional backgrounds and driving habits to ensure the diversity of interview results [4]. The interview will focus on the user's specific feelings about the use of the car, the motivation of the purchase decision, and the loyalty to the brand. Select five users who agree to accept field observation, follow them for daily driving, and record their actual behavior and feedback in the process of using the car. This method can capture the real reaction of users in the natural state, so as to understand the user experience more accurately.

### 2.2. Sample and Data Collection

In order to ensure the representativeness and reliability of the research, it is planned to collect at least 500 valid questionnaire data. Using stratified random sampling method, the target user groups are stratified according to age, gender, region and other factors, and then a corresponding number of samples are randomly selected from each layer. Collect questionnaire data through the online questionnaire platform, and invite users to participate in in-depth interviews and field observations after completing the questionnaire [5-6]. All users participating in the research will be informed of the use of data and confidentiality measures to ensure the ethics and legality of the research.

### 2.3. Data Analysis

Clean the collected questionnaire data, remove invalid and duplicate data, and ensure the accuracy and consistency of the data. At the same time, the records of in-depth interviews and field observations are sorted and coded for subsequent analysis. Using SPSS and other statistical software to make descriptive statistics and correlation analysis on the questionnaire data, so as to reveal the key factors of user experience and their relationships. At the same time, qualitative analysis is carried out by combining the records of in-depth interviews and field observations, so as to understand the real experience and needs of users more comprehensively.

## 3. New Thinking and Logical Exploration of Automobile User Experience

With the continuous evolution of the automobile industry, the traditional product-centered thinking mode has gradually given way to the user-centered design concept. In this transformation, automobile user experience has become the focus of the industry. The purpose

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of this study is to explore the new thinking and logic of automobile user experience in order to better meet the needs of contemporary consumers.

First of all, we need to start from the actual needs of users and dig deep into their real expectations of automobile products. This is not only limited to the traditional considerations such as vehicle performance, comfort and safety, but also includes the emotional needs, social needs and self-realization needs of users in the process of use [7]. Through user research and data analysis, we can grasp these requirements more accurately and provide powerful guidance for product design. Secondly, the design of user experience needs to run through the whole life cycle of the car. From information consultation and test drive experience before buying a car to after-sales service and maintenance after buying a car, every link should be carefully designed to ensure that users can get a satisfactory experience at any contact point. This requires close cooperation between automobile manufacturers and service providers to jointly create a seamless service system.

In addition, with the rapid development of intelligent and networked technology, the automobile user experience is gradually changing to digital and personalized direction. Therefore, it is necessary to use advanced technologies such as big data and artificial intelligence to conduct in-depth analysis of user behavior in order to realize innovative functions such as personalized recommendation and intelligent interaction [8]. These functions can not only enhance users' driving pleasure, but also enhance users' loyalty and stickiness to the brand.

The new thinking of automobile user experience should also include the consideration of environmental sustainability. With the emergence of new technologies such as electric vehicles and intelligent driving, it is necessary to think about how to integrate these technologies into user experience design in order to achieve the goals of energy saving, emission reduction and green travel [9]. This is not only an inevitable requirement to respond to the global environmental protection trend, but also an important way to enhance the social responsibility and market competitiveness of automobile brands.

The brand-new thinking and logical exploration of automobile user experience is a multi-dimensional and all-round process. By digging deeply into users' needs, creating a life-cycle service experience, using advanced technology to realize personalized interaction and paying attention to environmental sustainability, we can bring users a more excellent automobile experience and promote the continuous innovation and development of the automobile industry.

## 4. Empirical Research

### 4.1. Data Analysis of Questionnaire Survey

According to statistics, 85% of users are satisfied with the performance of this brand of cars, and 60% of them are very satisfied. 78% of users think that the interior space is spacious and comfortable, and the seat design is reasonable. Up to 90% of users think that the brand car has complete safety configuration and a strong sense of security during driving. 70% users are satisfied with the after-sales service, but 30% users still report that the waiting time for maintenance is too long.

### 4.2. The Key Factors of User Experience and Their Relationships

There is a strong positive correlation between vehicle performance satisfaction and seat comfort satisfaction (correlation coefficient is 0.652). This means that when users are satisfied with the performance of the vehicle, they are often satisfied with the comfort of the seat. Conversely, high satisfaction with the seat comfort may reflect the good feeling of the overall performance of the vehicle. There is also a positive correlation between vehicle performance

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satisfaction and safety perception satisfaction (correlation coefficient is 0.587). This result shows that vehicle performance is closely related to users' perception of safety. A car with excellent performance can often provide better handling and stability, thus enhancing the user's sense of security during driving. The correlation between seat comfort satisfaction and safety perception satisfaction is 0.531, indicating that there is a moderate positive correlation between them. This can be understood as that the comfort of the seat is not only related to the riding experience, but also may affect the driver's concentration and reaction speed during driving, thus affecting the perception of safety. Although the correlation between after-sales service satisfaction and other three factors (vehicle performance satisfaction, seat comfort satisfaction and safety perception satisfaction) is relatively low, it is still significant. This shows that the quality of after-sales service will also affect users' satisfaction with other aspects of the vehicle to a certain extent. Good after-sales service can improve the overall satisfaction of users, otherwise it may reduce users' evaluation of vehicle performance, comfort and safety. See Table 1.

**Table 1.** Correlation analysis results

| variable | Vehicle performance satisfaction | Seat comfort satisfaction | Safety perception satisfaction | After-sales service satisfaction |
|---|---|---|---|---|
| Vehicle performance satisfaction | 1.000 | | | |
| Seat comfort satisfaction | 0.652** | 1.000 | | |
| Safety perception satisfaction | 0.587** | 0.531** | 1.000 | |
| After-sales service satisfaction | 0.421** | 0.398** | 0.473** | 1.000 |

Note: * * indicates significant correlation at 0.01 level (double tail).

### 4.3. In-depth Interview and Field Observation Found That

Users generally pay attention to the practicality and ease of use of intelligent driving assistance system during driving. Some users mentioned that the noise control of vehicles needs to be improved when driving at high speed. On-the-spot observation shows that users have a certain learning cost when operating the in-vehicle infotainment system.

## 5. Result Discussion

Through comprehensive methods such as questionnaire survey, in-depth interview and on-the-spot observation, this study deeply explored the real experience of specific brand car users. The data shows that up to 85% of users are satisfied with the performance of the brand car, and 60% of them are very satisfied. This high satisfaction may come from the excellent dynamic performance, handling stability or fuel economy of the vehicle, which together constitute the comprehensive evaluation of the vehicle performance by users. At the same time, 78% of users think that the interior space is spacious and comfortable, and the seat design is reasonable, which reflects the brand's intention in the interior space layout and seat design of the vehicle and provides users with a comfortable riding experience. In terms of safety, 90% of users think

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that the brand car has complete safety configuration and a strong sense of security during driving. This high evaluation reflects the brand's attention and investment in vehicle safety performance, providing users with a strong safety guarantee. However, in terms of after-sales service, although 70% users expressed satisfaction, 30% users still reported that the waiting time for maintenance was too long. This shows that the brand's after-sales service efficiency needs to be improved, and the maintenance process needs to be further optimized to shorten the waiting time of users and improve service efficiency.

According to the results of correlation analysis, there is a strong positive correlation between vehicle performance satisfaction and seat comfort satisfaction (correlation coefficient is 0.652). This shows that the user's satisfaction with vehicle performance is closely related to the satisfaction with seat comfort. When the vehicle performance is excellent, users often give high praise to the seat comfort. Therefore, automobile manufacturers should pay attention to the balance between performance and comfort when designing vehicles, so as to provide all-round high-quality driving experience. At the same time, there is also a positive correlation between vehicle performance satisfaction and safety perception satisfaction (correlation coefficient is 0.587). This means that users' recognition of vehicle performance is often accompanied by affirmation of safety performance. Vehicles with excellent performance usually have better handling and stability, thus enhancing the user's sense of security during driving. The correlation between seat comfort satisfaction and safety perception satisfaction is 0.531, showing a moderate positive correlation. This may be because comfortable seat design helps to reduce driving fatigue, improve the driver's attention and reaction speed, and then enhance driving safety. It is worth noting that the correlation between after-sales service satisfaction and the other three factors is relatively low, but it is still significant. This shows that the quality of after-sales service affects the user's comprehensive evaluation of vehicle performance, seat comfort and safety perception to a certain extent [10]. Therefore, improving the quality of after-sales service is of great significance for improving the overall satisfaction of users.

Through in-depth interviews and field observation, it is found that users are generally concerned about the practicality and ease of use of intelligent driving assistance system during driving. With the continuous progress of science and technology, intelligent driving assistance system has become an important means to improve driving convenience and safety. Therefore, automobile manufacturers should continuously optimize the performance of these systems to improve their practicability and user-friendliness. In addition, some users mentioned that the noise control of vehicles needs to be improved when driving at high speed. Noise control is one of the important factors affecting driving comfort. In order to provide a quieter driving environment, automobile manufacturers need to improve the sound insulation materials and technology. Finally, the field observation shows that users have a certain learning cost when operating the in-vehicle infotainment system. In order to reduce this cost, the design of on-board system should be more intuitive and easy to use, and detailed operation guides and tutorials should be provided to help users get familiar with the system functions more quickly.

## 6. Conclusion

The brand-new thinking and logical exploration of automobile user experience theory in consumer research reveals the importance of user experience under the reform of automobile industry. The research conclusion shows that with the progress of science and technology and the diversification of consumer demand, the automobile has surpassed the simple vehicle attribute and become an important carrier to show personal taste and quality of life. Therefore, in-depth research and improvement of automobile user experience has become a key factor affecting consumers' purchase decision. It is found that vehicle performance, seat comfort, safety perception and after-sales service quality are the key factors affecting user experience.

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In particular, there is a strong positive correlation between vehicle performance and seat comfort and safety perception, which shows that automobile manufacturers should pay attention to the balance between performance and comfort when designing vehicles to provide all-round high-quality driving experience. This requires automobile manufacturers and service providers to work closely together to create a seamless service system to meet the needs of users in all aspects, such as before buying a car, after buying a car and maintenance. The automobile user experience is gradually changing to digital and personalized direction. Therefore, automobile manufacturers need to use advanced technologies such as big data and artificial intelligence to deeply analyze users' behaviors, so as to realize innovative functions such as personalized recommendation and intelligent interaction, thus enhancing users' driving pleasure and brand loyalty.

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