

Research on Consumer Demand for Automotive Modification Based on Howard Shays Model

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Abstract: At present, the automotive modification industry in China is developing rapidly. In order to understand the consumption needs of automotive modification users, analyze the consumption logic and development trends of the domestic modification market, a consumption demand model for automotive modification is constructed based on the Howard Schemes model. Through questionnaire survey and data analysis, the modification preferences of different characteristic groups are studied, and the correlation between different price vehicles and modified product prices is analyzed through correlation methods. This is provide support for design, development and marketing of modified products.

Keywords: Automotive modification, Howard Shays model, Consumer demand.

1. Introduction

Car modification refers to the act of altering or modifying the original design, appearance, or performance of a car. These modifications can be made to enhance the aesthetics of the car, improve its functionality, increase speed, or personalize it according to the owner's preferences. With the further upgrading of the national consumption level, car modification, as an important part of the automotive aftermarket, has gradually unleashed its consumption potential. Cars are not just means of transportation; they have become a medium for the new generation of consumers to express their individuality, showcase their uniqueness, and pursue diversification in consumption.

Based on the different subjects implementing the modifications, the car modification industry in China can be divided into two main categories: pre-installed modifications and post-installed modifications. Pre-installed modifications are further divided into customized modifications and authorized modifications. Customized modifications refer to the actions taken by automotive manufacturers to alter the exterior, interior, or performance of vehicles before they leave the factory. Authorized modifications refer to the actions taken by specialized vehicle manufacturers to modify vehicles to have specific functions. Consumer-oriented modifications refer to the actions taken to modify the exterior, interior, or performance of vehicles through various channels such as 4S stores and car modification shops after the vehicles have left the factory. These three types of modifications complement each other to meet the diverse needs of consumers for modifications.

This study includes both pre-installed and post-installed modification methods, focusing on five dimensions: brand, product, culture, cognition, and individual consumers, to collect factors influencing consumers' purchase of modification products and to construct a system of influencing factors. In the process of research and analysis,

consumer behavior theory is used as the research basis to reveal the extent to which various factors influence consumers' willingness to purchase modification products. Data collection is mainly conducted through survey questionnaires, and the Howard Shays model is used as the structural basis to explore the demand for customized car modifications and to assess modification consumption trends.

2. Consumer Model Construction and Questionnaire Survey

2.1. Consumer Model Construction

The consumer model construction is primarily based on the Howard Shays model, focusing on four dimensions: external factors, stimulus factors, internal factors, and purchase decision-making, to analyze the behavior of domestic modification consumers in purchasing modification products.

2.2. Questionnaire Design

Based on the consumer demand model for modification consumers, the questionnaire is designed to cover three aspects: external factors, stimulus factors, and internal factors. External factors mainly involve statistical analysis of consumer gender, age, hobbies, region, occupation, and vehicle ownership type. The question setting mainly consists of single-choice questions, with the hobbies section allowing for multiple choices. Stimulus factors include investigation into modification product brands, expected modification projects, modification services, quality reputation, marketing activities, etc., which are the main questions in the questionnaire. These questions are mainly set as multiple-choice questions, with the brand camp-related questions set as single-choice questions. Internal factors include attitudes towards modification, acceptable maximum delivery time, level of understanding of regulations, etc. The questions in this section are all set as single-choice questions.

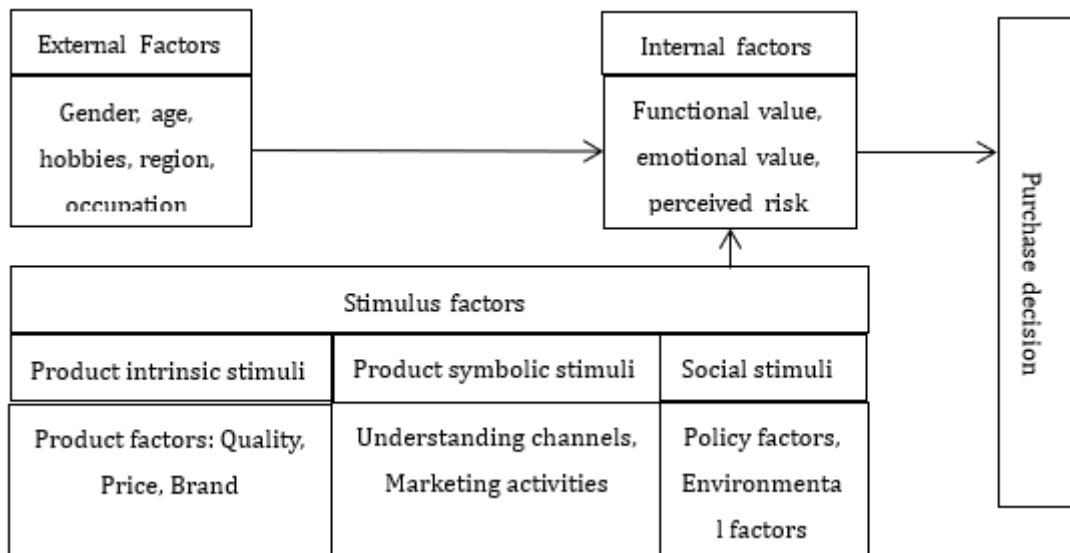


Figure 1. Consumer Demand Model for Modification Based on the Howard Shays Model

Table 1. Questionnaire

Category	Question
External Factors	1. Do you own a car?
	2. Do you have any plans to purchase a car recently?
	3. What is your budget for purchasing a car?
	4. Do you plan to buy a new car or a used car?
	5. What type of fuel do you intend to purchase for your car?
	6. What type of car do you plan to purchase?
	7. What is your gender?
	8. What is your age?
	9. What is your highest level of education?
	10. What city are you located in?
	11. What is your current occupation?
	12. What are your interests and hobbies?
Stimulus Factors	1. Which brand type of car is your preference?
	2. Which camp does your vehicle brand belong to?
	3. Which type of modification are you more inclined towards?
	4. Which car modification-related activities or events are you willing to pay attention to or participate in?
	5. What aspects of the vehicle do you primarily expect to improve with modification?
	6. What specific projects/parts do you expect to modify on your vehicle?
	7. Based on your current vehicle or the vehicle you plan to purchase, what is your budget for vehicle modification?
	8. What modification-related content information would you like to access?
	9. Which channel do you prefer to receive modification services from?
	10. Which of the following modification services are you most looking forward to?
	11. What are your sources of information regarding modification?
	12. What is your tendency for purchasing modification components?
Internal factors	1. What is your attitude towards vehicle customization or modification?
	2. Why are you not interested in car modification? (Main reason)
	3. Do you have any understanding of the new regulations regarding car modification?
	4. What is the longest waiting time you can accept after successfully placing an order?

3. Survey Data Analysis

3.1. Descriptive Statistics

The data for this study were obtained from a questionnaire survey distributed through the Car Home Modification Star platform. The survey covered individuals of different ages, occupations, and regions across the country, with a total of 3874 questionnaires collected. Among them, there were 3813

valid questionnaires. Considering that China's car modification industry is still in its nascent stage, the survey population was divided into three categories based on the statistical results of internal factors in the questionnaire: highly interested in modification (those who have already modified, are considering modification, or are very interested in modification), low interest (those with some interest, occasionally pay attention), and no interest (completely uninterested), accounting for approximately 42%, 47%, and

11%, respectively.

3.2. External Factors Analysis

3.2.1. Male Car Owners Show Higher Interest in Modification

The car modification consumers surveyed in this study exhibit distinct characteristics. In this survey, male modification consumers accounted for over 95%, while females accounted for less than 5%. Males remain the primary

consumers in the car modification industry. According to the statistics of modification consumer vehicle ownership types, the majority of participants in the customized modification survey were owners of fuel-powered vehicles. Generally, male consumers have certain requirements for the mechanics and driving enjoyment of fuel-powered vehicles in their daily lives, and their interest in modification is relatively higher than that of females.

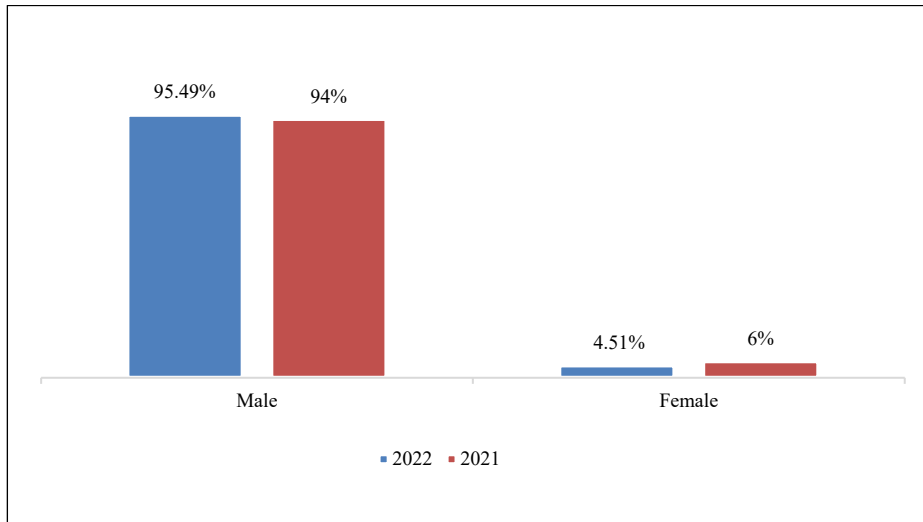


Figure 2. Distribution of Gender Among Modification Consumers

3.2.2. Young, Sporty, and Trendy: The Labels of Modification Users

From an age perspective, the majority of modification consumers were born in the 1980s, with over 79% being under the age of 42. Young and middle-aged consumers are more likely to be attracted to entertainment or professional activities and show higher preferences for sports, movies, music, and other related interests.

Within the group highly interested in modification, the proportion of post-90s generation consumers is significantly higher than that of the post-70s generation. Car modification

has certain industry-specific characteristics. For customized modification models, most are limited and sold for a limited time, possessing novelty and curiosity, catering to young users who advocate independence, have a higher curiosity about new things, and possess a strong desire for exploration. Additionally, the cool exterior design, technological interior, and upgraded performance experience of modified vehicles also align more with the preferences of younger people. Furthermore, younger consumer groups are more likely to be influenced by mature modification cultures from abroad, gradually becoming the main consumer group.

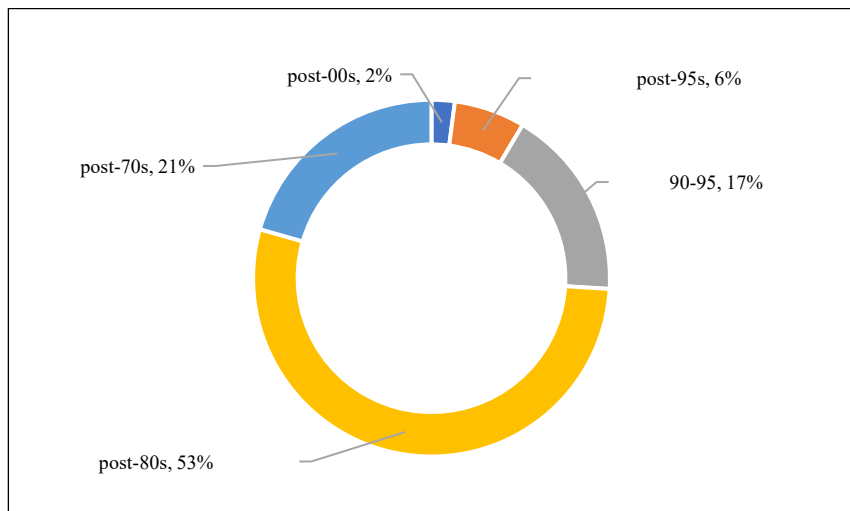


Figure 3. Distribution of Age Among Modification Consumers

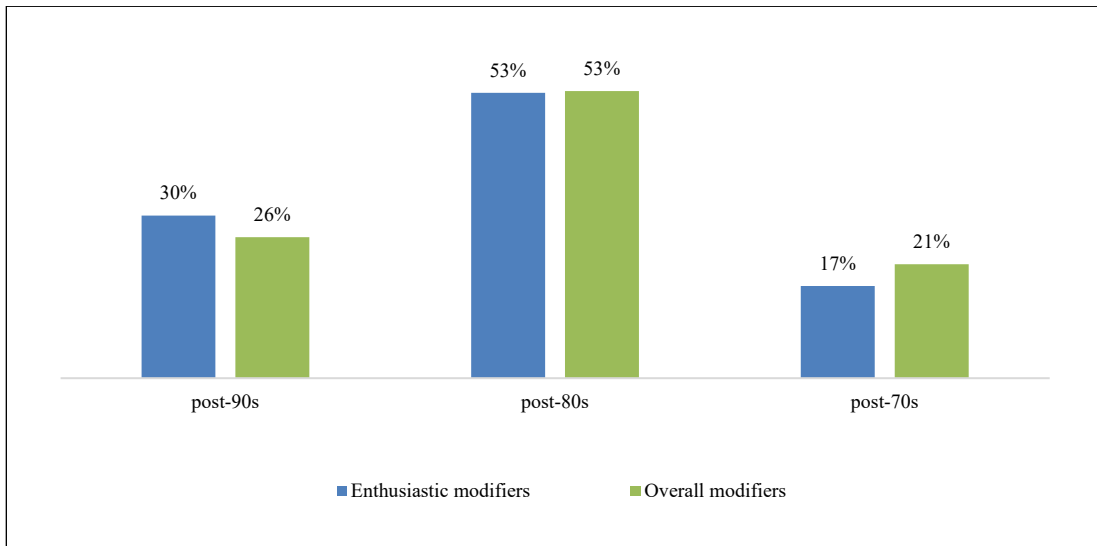


Figure 4. Distribution of Age Among Modification Enthusiasts

3.2.3. Car Modification is Closely Related to Consumer Purchasing Power

From the perspective of urban distribution, over 46% of users are from first-tier and new first-tier cities, while over 67% are from second-tier and above cities. Among those with management authority in private enterprises, a higher proportion own cars, followed by employees of private enterprises and fixed employees of institutions. Higher income and stable employment provide a better economic

foundation for modification interests, and consumers are more willing to pay premiums for modification products.

The car prices among the group highly interested in modification are concentrated in the range of 100,000 to 300,000 RMB, with the most acceptable budget for modification being approximately 10% of the car price. Correlation analysis conducted using the PASS software shows a strong positive correlation between modification budget and vehicle price.

Table 2. Correlation Between Car Price and Modification Budget Among Enthusiasts

		Car Price	Modification Budget
Car Price	Pearson Correlation	1	.999**
	Sig. (Two-tailed)		.000
	Cases	7	7
Modification Budget	Pearson Correlation	.999**	1
	Sig. (Two-tailed)	.000	
	Cases	7	7

** Significant at the 0.01 level (Two-tailed).

Table 3. Distribution of Modification Budget Among Enthusiasts

		Car Price (in ten thousand RMB)						
		5 and below	5~10	10~20	20~30	30~50	50~100	100 and above
Modification Budget (in RMB)	2000 and below	9%	6%	3%	1%	0%	0%	0%
	2000~5000	30%	25%	13%	7%	4%	1%	0%
	5000~10000	30%	45%	30%	19%	9%	5%	0%
	10000~30000	21%	18%	38%	41%	37%	15%	12%
	30000~50000	0%	3%	12%	23%	28%	28%	4%
	50000~100000	0%	1%	2%	7%	18%	29%	15%
	100000~200000	0%	1%	1%	1%	3%	18%	19%
	200000 and above	9%	0%	0%	0%	1%	2%	50%

3.3. Stimulus Factors Analysis

3.3.1. Modification Experience Exchange Resonates More with Consumers

Enthusiastic modification users emphasize modification content that provides practical guidance value and are willing

to participate in exhibitions and gatherings of car enthusiasts. Through research, enthusiasts prefer information such as modification cases, sharing among car enthusiasts, and modification knowledge, primarily sourced from online channels, which can guide modification operations. In contrast, less interested users prefer automotive competitions.

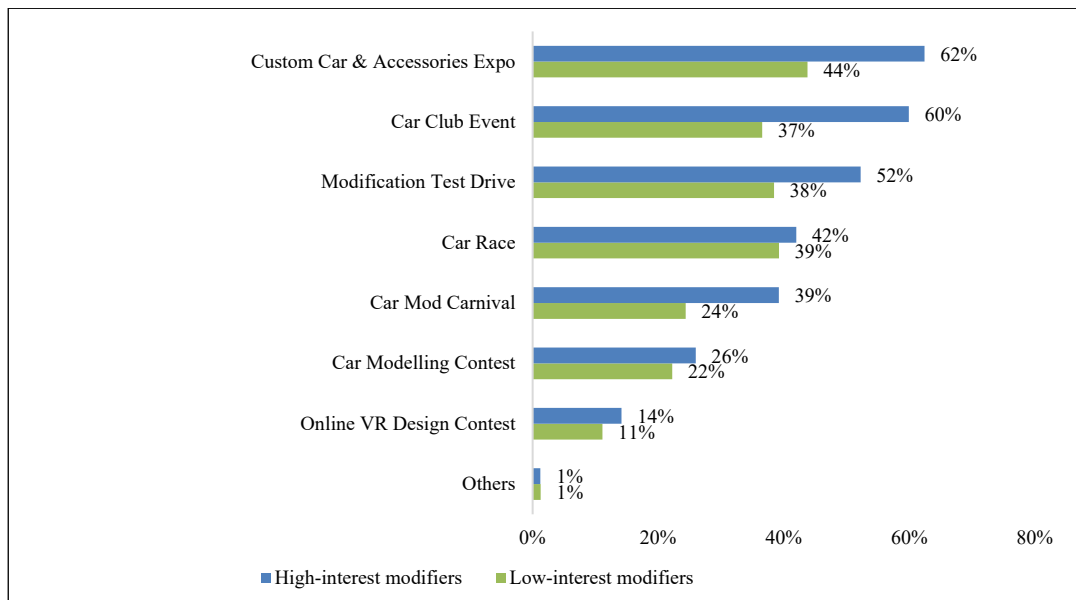


Figure 5. Distribution of Willingness to Participate in Modification Events

3.3.2. Differentiated Preferences in Modification Direction and Projects Among Various Interest Groups

There are differences in modification direction and projects among different interest groups. The highly interested group most eagerly anticipates modifications in appearance and handling, showing a higher preference for modifications such as wheels, body kits, and suspension. However, the less interested group tends to prefer modifications such as lights, interior decoration, color change wraps, in-car entertainment systems, and audio systems. They show weaker preferences for performance-related modification projects, especially

suspension and brake modifications.

3.3.3. "Worry-Free Service" is Preferred by Consumers

Most highly interested modification users expect one-stop car modification, compliance filing, and a more intuitive presentation of modification plans. Currently, the industry regulations are relatively incomplete, and modification users have a low level of understanding of regulations. In this situation, one-stop services for car modification and compliance filing can effectively address user concerns, helping users reduce communication costs and cumbersome processes, and maximizing the enjoyment of efficient and thoughtful services.

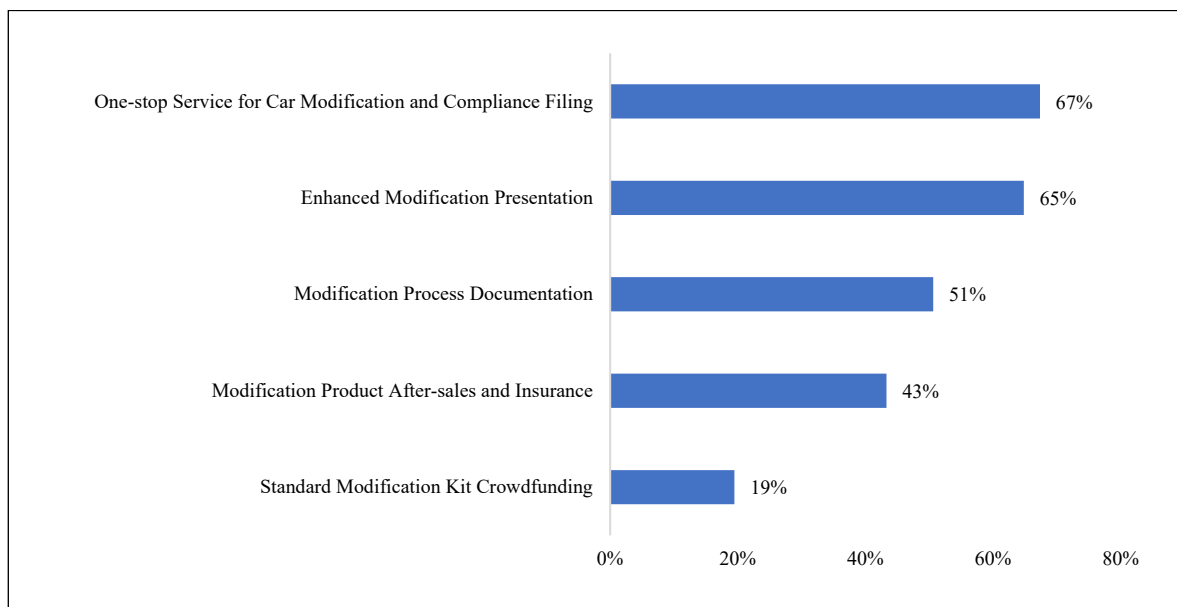


Figure 6. Distribution of Modification Service Demands

3.3.4. Quality and Reputation are Key Factors

Products with excellent quality and reputation are highly valued. Enthusiastic modification users tend to prefer modification shops and original factory customization, while

older users trust the original factory channels more. Among them, users generally prefer to purchase modification products with a certain brand influence or certification, with no significant preference for whether the modification products are imported or not.

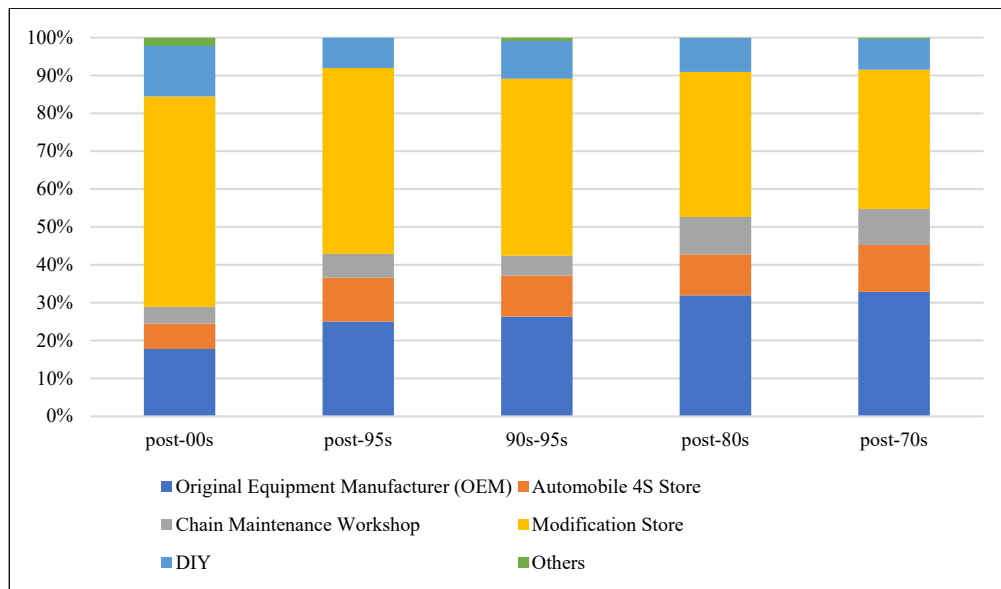


Figure 7. Distribution of Modification Channels

4. Emerging Trends in Modification Consumption

4.1. With the trend towards younger demographics, the middle-class consumer base continues to grow.

In 2021, 38.8% of modification enthusiasts were born in the 1980s, while in 2022, this proportion reached 53.5%. With stable employment and improved financial status, the post-80s generation will continue to drive interest and demand for car modifications. Additionally, as consumer spending rebounds, the development of the car modification market will accelerate. With a large base of car owners, the car modification market is poised for explosive growth in the future. Moreover, an increasing number of young, educated car owners are becoming modification enthusiasts, placing greater emphasis on safety, quality, and personalization.

4.2. Car Enthusiast Activities as Key for User Retention and Brand Reputation

As observed in this research, consumers have trust in original and official channels, and they prefer modification-related exchanges and displays. Automobile companies can therefore initiate or participate in exhibitions, car club events, themed competitions, etc., which can bring certain benefits to the modification business of the company. Moreover, when organizing offline activities for modification users, automobile companies and modification clubs should align with user preferences, such as outdoor camping, track experience days, etc. This will enhance user satisfaction and brand value, thereby increasing potential value and customer loyalty.

4.3. Win-Win Competition between New Energy and Conventional Vehicles in Modification

With the trend towards electrification, new energy vehicle brands and products are more favored by young users. Through exterior and software modifications and upgrades, achieving a "thousand faces for a thousand people" status becomes easier. For traditional fuel-powered cars, more

emphasis should be placed on young and high-budget groups, providing more functional and performance modification options.

4.4. Emergence of New Modification Channels and Standardized Services

Although currently, preferences for modification at chain repair shops, 4S stores, or DIY modifications are not high, it is closely related to the convenience of modification channels and services available to users. It should be noted that young users are more willing to try DIY modifications, have higher trust in official modification parts, and hope for standardized services such as compliance filing and presentation of modification plans. With the popularization of modification services at chain repair shops, 4S stores, and the establishment of DIY modification venues, we will soon enter an era of standardized modification services.

4.5. China's Opportunity to Build Modification Brands

With a certain foundation of national and cultural confidence, the trust in Chinese brands among users has been increasing year by year, and modification enthusiasts have not shown significant differences in brand selection. It is recommended that domestic modification brands pay more attention to product quality and services, convey positive brand concepts to consumers through certification, competitions, etc., and achieve rapid brand development.

5. Conclusion

This study, based on consumer behavior theory, investigates the main factors and mechanisms influencing Chinese consumers' behavior in car modification consumption through questionnaire surveys. Additionally, it provides industry development strategy recommendations based on the analysis of modification consumption trends.

Firstly, in constructing the modification consumption model, the theoretical framework of the Howard Shays model was mainly utilized. Combining the characteristics of modification consumer behavior, internal factors were determined from dimensions such as attitude towards modification, interest in car modification, understanding of

modification regulations, and willingness to wait for delivery. External factors were determined from dimensions such as personal basic information, hobbies, car ownership, and modification budget. Stimulating factors were determined from dimensions such as modification brands, projects, services, and information. The feasibility of this model in both theory and practice was verified through the research results.

Secondly, the research results indicate an increasing demand from consumers for personalized and customized cars. To accelerate the development of the car modification industry, it is necessary to continuously improve the industry development environment. At the top-level design, it is necessary to address the institutional barriers faced by the car modification industry in China, establish effective cooperation mechanisms among various departments, and categorize and promote the compliance of modification projects in stages. In terms of industry organization, support and guidance should be provided to domestic car modification industry organizations, encouraging them to actively carry out industry self-discipline, standard formulation and promotion, talent training, information collection, data analysis, international exchanges, etc. Furthermore, it is important to build authoritative, professional, and influential car modification industry organizations, and establish industry exchange service platforms for content, transactions, socializing, etc., providing integrated solutions for consultation, modification effect display, component sales, offline installation, etc., for enterprises and consumers. From the perspective of automobile companies, with the development of China's automobile industry entering a new stage and the continuous increase in demand for car modification, the market prospects are broad. Relevant market entities should accelerate their layout in the field of car modification. They can achieve this by organizing car modification competitions, conducting joint online and

offline promotional activities and exhibitions, forums, etc., to continuously expand the influence of car modification and enhance the social atmosphere of car modification culture.

Finally, this study's division and analysis of modification consumer interest levels help modification industry entities further understand consumers. In future research, deeper investigations and analyses can be conducted on consumer types and segmented modification market consumption characteristics to comprehensively understand modification consumer behavior. This will assist modification industry entities in better strategic planning and product development.

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