

## **Chinese Automobile Brand International Marketing Target Market Selection Model Based on AHP**

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### **Abstract**

*The State Council issued ten industrial revitalization plan in 2009. The plan emphasizes that we should support automobile manufacturers to develop independent brands. Now China has a number of independent brands. China will gradually change from "auto big" to "auto power" only when these independent brand cars go to the international market. The article mainly studies Chinese automobile brands international marketing target market selection model. Firstly, the article introduces the motivation for enterprise international marketing, international market segmentation and target market selection theory. Then the article makes the automotive market attractiveness analysis based on AHP. It gets the conclusion that the low-end market miniature car is the most attractive while the fully competitive market midsize sedan is the most unattractive. At last, the paper determines that the low-end market and emerging market miniature car, economy cars is the target market which Chinese automobile manufacturers should enter.*

**Key words:** AHP; target market; auto brands; international marketing

### ***1. Motivation Analysis of Enterprise International Marketing***

International marketing refers to the process that goods and services flow into hands of consumers or users more than one country. In other words, international marketing is a cross-border social and management process. Enterprises create products and values to be exchanged in the international market in order to meet needs of multinational customers and gain profit through planning, pricing, promotion and guidance. The main purpose of enterprise's international marketing is inseparable from market factor, labor factor, natural resource factor, barrier factor, global strategy integration factor. Market factor, namely, enterprises want to occupy and expand overseas markets through the implementation of international business. It includes the following two specific situations. Firstly, enterprises enter the international market ahead of others. Secondly, enterprises expand into new markets. Labor factor, namely, enterprises take advantage of relatively cheap labor of host country through the implementation of international business. Natural resource, namely, enterprises obtain a stable and relatively inexpensive source of raw materials through the implementation of international business. Barrier factor, namely, enterprises aim to bypass high tariffs, low import quotas, import controls and other trade protectionist measures through the implementation of international business. Global strategy integration factor, namely, large multinationals take global strategy and diversification in order to further develop its competitive advantage. Chinese automobile manufacturers select international marketing strategy, which aims to expand overseas market share and implement global strategy. Domestic car brands' entering the international market reflects the country's independent innovation capability, which also indicates that China has entered the ranks of innovative countries.

### ***2. International Market Segmentation and Target Market Selection Theory***

Market segmentation refers to the process that the whole market is divided into different consumer groups based on consumer demand. Its objective basis is based on consumer demand heterogeneity. Through market segmentation, customers' needs have more common on a particular market with similar products, while their needs have a larger difference among different market.

Target market refers to the market segment that enterprise is ready to enter after market segmentation. Chinese independent brand car enterprises want to get long-term survival and development through international marketing and it is necessary to enter international market from a passive way to an initiative way. The initiative way does not mean blindly attacking. International marketing enterprises should not enter every market because of different market in the world. It requires that enterprises make international market segmentation to lock the target market in the process of marketing according to different needs and purchasing behavior in order to discover potential market, take enterprise marketing advantage and improve marketing efficiency.

### 3. Attractiveness Analysis of Market Segment

#### 3.1 Automotive market segmentation

Based on consumer demand research and market segmentation theory, combined with international market classification of automotive industry and strength characteristics of independent brand automobile industry, we obtain nine basic passenger vehicles market segments. They are: the low-end market mini car ( $M_1$ ), the low-end market economy car ( $M_2$ ), the low-end market midsize car ( $M_3$ ), emerging and developing market mini car ( $M_4$ ), emerging and developing market economy car ( $M_5$ ), emerging and developing market midsize car ( $M_6$ ), perfectly competitive market mini car ( $M_7$ ), perfectly competitive market economy car ( $M_8$ ), perfectly competitive market midsize car ( $M_9$ ).

#### 3.2 Assessment Index

Considering attractiveness analysis of nine market segments, the optional indexes are as follows:

Market degree (MD): Market degree refers to total car buying population of the market, income level and consumer spending, consumer preference and other factors of car buying family. Therefore, there are two sub-indicators under market degree indicator. They are total population (TP) and actual purchasing power (PP).

Development prospect (DP): It is decided by economic growth (EI) and population growth (PI) of the market segment.

Market structure (MS): including competitive structure (CS) and market restrict (MR). Competitive structure is decided by car consumers, potential competitors and car manufacturers, which reflects the degree of market competition.

In short, the market attractiveness size is determined by the size of the market, the development prospect and market structure. Larger market size, better development prospect and lower competition level decide bigger market attractiveness. On the contrary, there is no attractiveness.

The constructed hierarchical structure is shown in Figure 1:

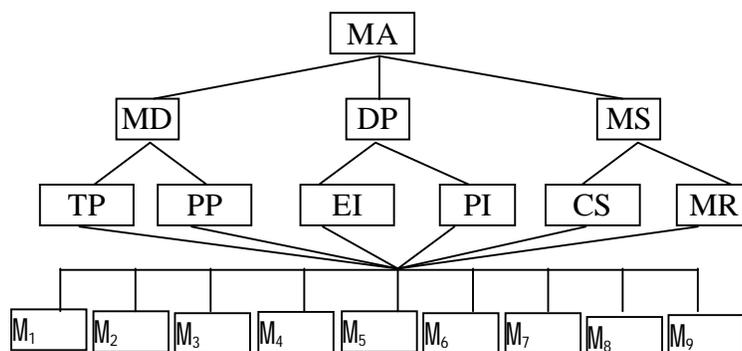


Figure 1 Hierarchical structure of market attractiveness analysis

#### 3.3 Index weight

According to Figure 1, we make comparison judgment about three elements of the second layer under the highest level and form judgment matrix. The judgment matrix and analysis result is shown in Table 1.

**Table 1 Judgment matrix and analysis result of the second layer elements under overall goal**

MA	MD	DP	MS	W <sup>(2)</sup>	Test result of consistency
MD	1	2	1/3	0.2493	$\lambda_{\max} = 3.0536$
DP	1/2	1	1/3	0.1571	CR=0.0462
MS	3	3	1	0.5936	

There are six elements in the third layer and there are two elements affecting one criteria of the upper layer. Because comparison matrix is second order, their biggest eigenvalue is 2, and thus the consistency ratio is zero, the judgment matrix is of full consistency. Judgment matrix and analysis results are shown in Table 2.

**Table 2 Judgment matrix and analysis results of the third layer elements under the second layer**

MD	TP	PP	W <sub>MD</sub> <sup>(3)</sup>	DP	EI	PI	W <sub>DP</sub> <sup>(3)</sup>	MS	CS	MR	W <sub>MS</sub> <sup>(3)</sup>
TP	1	1/4	0.2	EI	1	3	0.75	CS	1	3	0.75
PP	4	1	0.8	PI	1/3	1	0.25	MR	1/3	1	0.25

There are six tables of judgment matrix and analysis result of the nine segments in the bottom under the upper layer. Since the judgment matrix is positive reciprocal matrix, the matrix's element value of lower half should be reciprocal value of corresponding element in upper half. So in each following high-level judgment matrix, we list element value of the upper half. Due to space limitation, this article omits the rest of the five tables.

First, under the criterion of total population of buying car, comparing population of buying car of nine market segments, we can get Table 3.

**Table 3 Pairwise comparison judgment matrix and analysis result**

TP	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	M <sub>5</sub>	M <sub>6</sub>	M <sub>7</sub>	M <sub>8</sub>	M <sub>9</sub>	W <sub>TP</sub> <sup>(4)</sup>
M <sub>1</sub>	1	1/3	3	2	1/3	3	3	2	2	0.1290
M <sub>2</sub>		1	5	3	1	4	3	3	3	0.2328
M <sub>3</sub>			1	1/3	1/4	1/2	2	1/2	1/3	0.0417
M <sub>4</sub>				1	1/3	3	2	2	1	0.0979
M <sub>5</sub>					1	3	5	4	3	0.2404
M <sub>6</sub>						1	2	2	3	0.0767
M <sub>7</sub>							1	1/3	1/5	0.0349
M <sub>8</sub>								1	1/2	0.0617
M <sub>9</sub>									1	0.0849

Sort result is as follows:

$$W_{TP}^{(4)} = (0.1290, 0.2328, 0.0417, 0.0979, 0.2404, 0.0767, 0.0349, 0.0617, 0.0849)^T$$

Under the criterion of real purchasing power, we can get such sort result:

$$W_{PP}^{(4)} = (0.1019, 0.0621, 0.0377, 0.1647, 0.0955, 0.0369, 0.2344, 0.1839, 0.0829)^T$$

Under the criterion of economic growth rate, we can get such sort result:

$$W_{EI}^{(4)} = (0.1475, 0.1928, 0.0497, 0.1439, 0.2400, 0.0764, 0.0295, 0.0436, 0.0767)^T$$

Under the criterion of population growth rate, we can get such sort result:

$$W_{PI}^{(4)} = (0.0877, 0.1884, 0.0553, 0.1385, 0.2329, 0.1037, 0.0401, 0.0616, 0.0918)^T$$

Under the criterion of competitive structure and market barrier, we can get such sort results:

$$W_{CS}^{(4)} = (0.2855, 0.1578, 0.0428, 0.1966, 0.0709, 0.0331, 0.1140, 0.0791, 0.0202)^T$$

$$W_{MR}^{(4)} = (0.3201, 0.1871, 0.1202, 0.0813, 0.0533, 0.0571, 0.0340, 0.0203, 0.1265)^T$$

Calculation results of nine tables are shown CR < 0.1, so the consistency of judgment matrix is acceptable. The corresponding single sort results are effective.

According to all above single sort results, we can get total order result W<sup>(4)</sup>. Synthesized result is as follows:

$$W^{(4)} = (W_{TP}^{(4)}, W_{PP}^{(4)}, W_{EI}^{(4)}, W_{PI}^{(4)}, W_{CS}^{(4)}, W_{MR}^{(4)}) (W_{MD}^{(3)}, W_{DP}^{(3)}, W_{MS}^{(3)}) W^{(2)}$$

$$= (0.2237, 0.1522, 0.0583, 0.1635, 0.1114, 0.0476, 0.1116, 0.0864, 0.0454)^T$$

Thus, the order of attractiveness in market segments is: M1 > M4 > M2 > M7 > M5 > M8 > M3 > M6 > M9.

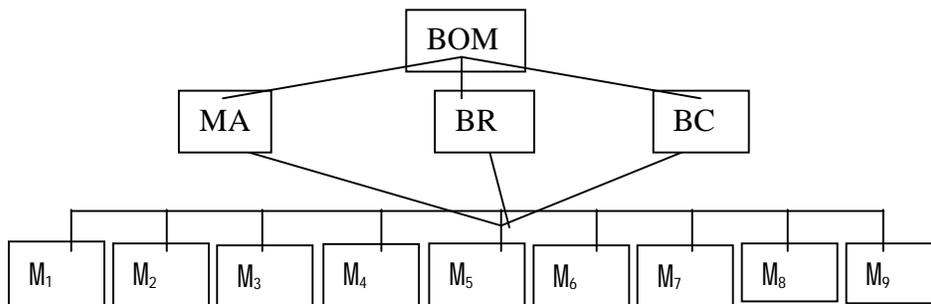
That is to say, the low-end market mini car is the most attractive, emerging and developing market mini car and the low-end market economy car has considerable market appeal, while perfectly competitive market midsize car is the least attractive. The result of this analysis can provide reference of choosing overseas market segments for our own brand cars.

**4. Target Market Selection**

Above, we analyze the attractiveness of the market segment by using AHP, but the most attractive market segment is not necessarily enterprises’ target market. Determining target market has relationship with resource and capacity. We still use AHP to analyze the market segment in order to get more rational and more accurately target market in this area.

**4.1 Assessment index**

Similarly, considering choice of target market, we still build a hierarchical structure. The top layer of evaluation is ideal target market (BOM); intermediate layer of evaluation is: market attractiveness (MA), business resource (BR) and business capacity (BC). Here, business resource includes all human resource, financial resource, capital, information and other resources; while business capacity includes technology, production, marketing, finance and organizational management and other aspects of capacity, the lowest layer are nine market segments. Hierarchical structure is shown in Figure 2.



**Figure 2: Hierarchical structure of target market selection**

**4.2 Index weight**

We do pairwise comparison about three elements affecting ideal target market selection. We can get judgment matrix and analysis result, which is shown in Table 4.

**Table 4 Pairwise comparison judgment matrix and analysis result**

BOM	MA	BR	BC	$W^{(2)}$	Consistency of test results
MA	1	3	6	0.6442	$\lambda_{max} = 3.0536$
BR	1/3	1	4	0.2706	CR=0.0462
BC	1/6	1/4	1	0.0852	

Market segment appeal weight is as follows:

$$W_{MA}^{(3)} = (0.2237, 0.1522, 0.0583, 0.1635, 0.1114, 0.0476, 0.1116, 0.0864, 0.0454)^T$$

Therefore we don’t need to do pairwise comparison under market attractiveness. Ordering result can be directly used in the subsequent synthesis ordering.

Under business resource standard, We do comparison about existing resources of nine markets. Then we get the ordering results:

$$W_{BR}^{(3)} = (0.2692, 0.1568, 0.0515, 0.2001, 0.1198, 0.0339, 0.0951, 0.0517, 0.0219)^T$$

Then under business capacity standard, we get ordering results:

$$W_{BC}^{(3)} = (0.2319, 0.1578, 0.0527, 0.2303, 0.1271, 0.0430, 0.0927, 0.0441, 0.0204)^T$$

Calculation results of two omitting tables have shown  $CR < 0.1$ , which indicates good consistency, then the corresponding single sort results are valid.

We can get the total sort result ( $W^{(3)}$ ) by above single sort result. The synthesized result is as follows:

$$W^{(3)} = (0.2367, 0.1574, 0.0560, 0.1790, 0.1149, 0.0436, 0.1055, 0.0735, 0.0368)^T$$

We can see from the sort result, independent brand car's target market should be defined as the low-end market mini car(M<sub>1</sub>)、 the low-end market economy car (M<sub>2</sub>)、 emerging and developing market mini car(M<sub>4</sub>) and emerging and developing market economy car(M<sub>5</sub>).

### **5. Conclusion**

In this paper, we make market attractiveness analysis by using AHP, we get the conclusion that the low-end market mini car(M<sub>1</sub>) is the most attractive and perfectly competitive market midsize car(M<sub>9</sub>) is the least attractive. Then we get the conclusion that the low-end market mini car (M<sub>1</sub>)、 the low-end market economy car(M<sub>2</sub>)、 emerging and developing market mini car(M<sub>4</sub>) and emerging and developing market economy car(M<sub>5</sub>) is the target market which our car brand should enter by using AHP.

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