The Competitiveness of the Small and Medium Enterprises in Marketing Performance Evaluation -----An Example of Zhejiang S Corporation

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Abstract: Understanding the importance of the marketing competitiveness of the small and medium enterprises (SMEs) as the premise, analytic hierarchy process is used and the competitiveness of SMEs in the evaluation of the marketing model is put forward in the paper. The design of index system and evaluation model of steps are discussed, it is found that the fuzzy comprehensive evaluation method is an effective model for SMEs marketing competitiveness evaluation. Finally, according to the index system and weight distribution, the fuzzy comprehensive evaluation method is used by the empirical analysis, at the same time the competitiveness of SMEs marketing upgrading of direction is indicated.

Keywords: Marketing Competitiveness, AHP, Fuzzy Comprehensive Evaluation

1 Introduction

The competitiveness of SMEs in marketing performance measurement is the evaluation results of the marketing of SMEs in the possession, using, management and efficient allocation of resources. Specifically, through the judge of SMEs operating results and operating performance, not only the owner can determine the next step in the development of business strategy, check the fulfillment of contracts, but also the SMEs operators and other stakeholders can make decision effectively based on the results of enterprise performance evaluation, and it will guide enterprises to improve their management to promote the economic benefits of raising the level of SMEs.

2 The evaluation methods of marketing competitiveness of SMEs

Evaluating the marketing competitiveness of SMEs mainly reflects in three aspects: First, all aspects of SMEs’ management is evaluated, including product innovation and development(PID), brand management(BM), supply chain(SC) and customer relationship management(CRM) in marketing; the second is marketing itself to SMEs in all aspects of management, including PID, BM, SC and CRM; the third is to evaluate the increasing level of the core marketing competitiveness of SMEs in the implementation process.

Looking at a lot of research in performance evaluation of SMEs, the contents of the evaluation can be found having been divided into evaluation object (the target), evaluation system (indexes), the evaluation criteria and evaluation methods. In the evaluation process, evaluation methods and the choice of evaluation indexes are very important. Because SMEs referred in this paper have relatively clear development goals to build the core competitiveness through marketing, there are many factors that can influence the goal, in order to make the result of evaluation most effective, achieve the ultimate goal; the key is to select the most reasonable evaluation method and evaluation indexes.

Currently a lot of performance evaluation methods and models are often used. Fuzzy comprehensive evaluation method is a more effective enterprise performance evaluation method. As the uncertainty of the external environment, the performance evaluation, and the ambiguity of human knowledge, business performance had a certain ambiguity. In order to make performance evaluation closer to the actual
situation, we must consider these uncertain and ambiguous factors, building evaluation model based on fuzzy mathematics to evaluate the performance of enterprises.

Formerly, there are some problems in using the evaluation method more or less, so we objectively need to build a set of scientific evaluation method in practice and that applies to quantitative indexes and qualitative indexes to evaluate further in the marketing competitiveness of SMEs in theory. The choice of fuzzy comprehensive evaluation method not only meet the above requirements, but also solve the environmental impact due to external uncertainties, uncertainty of evaluation and ambiguity of human knowledge arising from the competitiveness evaluation, it has a certain practicality. Fuzzy comprehensive evaluation model mainly includes the following three aspects:

(1) Evaluation according to property classification and stratification are arranged in a hierarchical structure of the evaluation index system. Among them, the first layer of knowledge management for SMEs to evaluate the performance of the overall goal (Y); the second layer of evaluation indexes are the division of the overall goal evaluation, marked as: \( V = \{ V(1), V(2), \ldots, V(i), V(n) \} \) \( (i=1,2,\ldots,n) \); third tier evaluation indexes are index factors, recorded as: \( V(i) = \{ V1(i), V2(i), \ldots, Vmi(i) \} \) \( (i=1,2,\ldots,m) \). At the same time, identification of the indexes correspond to the weight of index based V-layer weight vector for the \( \alpha \), \( \alpha = \{ \alpha(1), \alpha(2), \ldots, \alpha(i), \alpha(n) \} \) \( (i=1,2,\ldots,n) \); \( Vmi (i) \) are relative to \( V(i) \) the weight vector, \( \beta(i) = \{ \beta1(i), \beta2(i), \ldots, \beta mi (i) \} \) \( (j=1,2,\ldots,m) \).

\[ 0 \leq \alpha(i) \leq 1, \quad 0 \leq \beta(i) \leq 1, \quad \sum_{j=1}^{m} \beta_{ij} = 1 \]  \hspace{1cm} (2-1)

(2) To take reviews as a collection of “excellent, good, general, poor, very poor”, reviews set are recorded as: \( U = \{ U_1, U_2, \ldots, U_n \} \), Level Matrix are recorded as: \( U = \{0.9,0.7,0.5,0.3,0.1\} \).

\[ F = B \times U^T \]  \hspace{1cm} (2-2)

(3) A single index can be recorded as: \( f_j(i) = \{ i=1,2,\ldots,n; j=1,2,\ldots,m \} \). \( F \) can represent the performance of the overall situation of the enterprise, should satisfy the following conditions:

\[ F = \sum_{i=1}^{n} \alpha(i) = \sum_{j=1}^{m} \alpha_j(i) \times f_j(i) \]  \hspace{1cm} (2-3)

3. Building evaluation index system of SMEs marketing competitiveness

In the competitiveness of SMEs in marketing, based on the assessment of basic research, the fuzzy comprehensive evaluation model is established and the evaluation indexes are designed. Moreover, the indexes of the marketing competitiveness of SMEs at all levels and their weight distribution are determined.

The evaluation of marketing competitiveness of SMEs is a complicated systematic project, which requires study of SMEs in the allocation of resources are whether or not compatible with the requirements of corporate marketing strategy of SMEs, after the implementation of marketing strategy, it will help to build enterprise’s core competitiveness strategy, and involve small and medium enterprises with the core competencies of marketing-related aspects. The accuracy of evaluation results mainly depends on evaluation methods and indexes. Therefore, it is essential for SMEs to devise a reasonable and accurate index for the performance evaluation of marketing management.

In this paper, evaluation indexes are designed by reference to some information about building a core competence, competitiveness in the market. These four indexes just as PID, BM, SC and CRM are taken as the first grade indexes.

3.1 Determination of first grade indexes

Based on the previous discussion, such a conclusion will be drawn: the marketing competitiveness of
SMEs can be evaluated from PID, BM, SC and CRM. The first grade indexes of the marketing competitiveness are as shown in Figure 3-1:

![Figure 3-1: First grade indexes of the marketing competitiveness evaluation of SMEs](image)

### 3.2 Determination of second indexes

For a comprehensive and fair way to establish an evaluation index system, this paper refers to a lot of international marketing competitiveness and core competence theory, some related studies based on the inherent characteristics of SMEs and their competitiveness in the evaluation of marketing research. According to significance and principles of the selected indexes, the following pre-selected second indexes have established under the first grade indexes.

The first major category is the evaluation index of PID. The specific indexes are mainly those such as the percentage of R&D, new product success rate, new product sales accounted for a percentage of sales of all products, time response to market (TRTM), and average annual investment yield rate of new products (AAIYRONP).

The second major category is the evaluation index of BM. The specific indexes are mainly those such as brand awareness (BA), brand reputation (BR), a percentage of famous brands accounting for the brands number of the enterprise, a percentage of famous brands sales accounting for sales of all products, sale growth rate to the cost of every ten thousand Yuan of sales marketing communications, success rate of new brands (SRONB), a percentage of brand intangible assets accounting for the total assets of enterprises (POBIAAFTAOE).

The third major category is the evaluation index of SC. The specific indexes are mainly those such as the rate of procurement of goods, delivery rate of purchasing goods on-time (DROPGOT), production and sale turnover (PST), the product sale rate, market share (MS), profitability share (PS), sale margins etc.

The fourth major category is the evaluation index of CRM. The specific indexes are as following: service marketing training, service sales accounting for the percentage of product sales, a percentage of value-added services accounting for the total cost of service (POVASAFTCOS), customer retention rates, customer satisfaction (CS), customer loyalty (CL).

The indexes of sets above are chosen by five management experts (experienced managers of SMEs). After selecting carefully, the second indexes are shown in Tables 3-1:

<table>
<thead>
<tr>
<th>No.</th>
<th>PID</th>
<th>BM</th>
<th>SC</th>
<th>CRM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>R&amp;D</td>
<td>BA</td>
<td>DROPGOT</td>
<td>POVASAFTCOS</td>
</tr>
<tr>
<td>2</td>
<td>TRTM</td>
<td>BR</td>
<td>PST</td>
<td>CS</td>
</tr>
<tr>
<td>3</td>
<td>AAIYRONP</td>
<td>SRONB</td>
<td>MS</td>
<td>CL</td>
</tr>
<tr>
<td>4</td>
<td>POBIAAFTAOE</td>
<td>PS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.3 Determining the relative weight of marketing competitive evaluation indexes

The above identified marketing competitive evaluation index system is used DELPHI method to determine the relative weight by five invited experts, specific steps are as follows:

1. The level of the evaluation index and the necessary explanatory notes should be prepared by experts.
2. Experts independently complete the form.
3. The statistical treatment of results will be completed, and the feedback should be delivered to the
experts, which will let the experts rethink whether or not to make adjustments and how to adjust their views.
(4) Repeat (3) step, until no objection.
(5) With the average representative of the views of the experts to arrive at the weight of each index, the results are sorting in the table 3-2:

<table>
<thead>
<tr>
<th>Target</th>
<th>First Grade Indexes $V_i$</th>
<th>Weight $(i)$</th>
<th>Second indexes $V_{ni}$</th>
<th>Weight $\beta_{ni} (i)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;D</td>
<td>PID $V(1)$</td>
<td>0.3</td>
<td>TRTM</td>
<td>0.54</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AAIYRONP</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>BM $V(2)$</td>
<td>0.29</td>
<td>BA</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>SC $V(3)$</td>
<td>0.18</td>
<td>BR</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>CRM $V(4)$</td>
<td>0.23</td>
<td>SRONB</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>POBIAFTAEO</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DROPGOT</td>
<td>0.29</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PST</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MS</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PS</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CS</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>POVASAFTCOS</td>
<td>0.47</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CL</td>
<td>0.34</td>
</tr>
</tbody>
</table>

4. Statistics and analysis

According to the design of the evaluation index system and weight distribution of the marketing competitiveness of SMEs, there is S Corporation in Taizhou, Zhejiang province which is taken as an example to research. Empirical studies will verify the marketing competitiveness of SMEs index system and its weight distribution to be scientific, rational and effective by using fuzzy comprehensive evaluation model.

4.1 S Corporation profile

S Corporation was founded in 1994, the total assets are about 300 million Yuan now, and it has 2,000 employees, engineers and technicians account for about 20%. In 2002, SAIC had recognized it as “famous trademark of China.” The Corporation has a lot of business such as cooking manufacture, trade, tourism, shipping, packaging etc. With the growth of the Corporation, its supply chain and sales management are also becoming more prominent. The Corporation attaches great importance to international market development, in line with the establishment of Chinese cooking utensils industry's development strategy, has established 40 offices and more than 100 subordinate offices. That has formed into four major distribution channels (supermarkets, chain supermarkets, shopping malls, wholesale markets).

At the same time, the corporation has expanded foreign markets through its own branded exports, with the world-famous brands OEM cooperation cooking methods to enter the international kitchen markets actively, products are exported to Europe, the United States, Japan, the Middle East, Southeast Asia and other countries, the export share has expanded year by year. The corporation exported about 17 million $ in 2006, 19.5 million $ in 2007, 21.78 million $ in 2008, and achieved good results.

4.2 Marketing competitiveness fuzzy comprehensive evaluation of S Corporation

Marketing competitiveness is the momentum of S Corporation, and helps to build its own core competence. Because of the disadvantages of the evaluation method and the difficulty of selecting

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indexes, it is a problem for S Corporation to how to build the core competitiveness effectively. Fuzzy comprehensive evaluation method is used on the S Corporation’s marketing competitiveness evaluation. The evaluation team is composed of five leaders who evaluate independently, the evaluation are classified into five levels as “excellent, good, general, poor, very poor”, denoted as \( \mathbb{U} = \{ U_1, U_2, U_3, U_4, U_5 \} \). According to the fuzzy comprehensive evaluation model proposed, the following result can be calculated step by step:

\[
\begin{align*}
R^{(1)} &= \begin{bmatrix}
0.8 & 0.2 & 0 & 0 & 0 \\
0 & 0.6 & 0.4 & 0 & 0 \\
0 & 0.4 & 0.6 & 0 & 0
\end{bmatrix}
R^{(2)} &= \begin{bmatrix}
0.6 & 0.4 & 0 & 0 & 0 \\
0.8 & 0.2 & 0 & 0 & 0 \\
0 & 0.6 & 0.4 & 0 & 0 \\
0 & 0.2 & 0.8 & 0 & 0
\end{bmatrix}
R^{(3)} &= \begin{bmatrix}
0 & 0.2 & 0.8 & 0 & 0 \\
0 & 0 & 1 & 0 & 0 \\
0.8 & 0.2 & 0 & 0 & 0 \\
0.6 & 0.4 & 0 & 0 & 0
\end{bmatrix}
\end{align*}
\]

\[
B^{(1)} = (0.432, 0.354, 0.124, 0, 0) \\
B^{(2)} = (0.502, 0.334, 0.264, 0, 0) \\
B^{(3)} = (0.448, 0.204, 0.348, 0, 0)
\]

\[
R = \begin{bmatrix}
0.432 & 0.354 & 0.124 & 0 & 0 \\
0.502 & 0.334 & 0.264 & 0 & 0 \\
0.448 & 0.204 & 0.348 & 0 & 0 \\
0.386 & 0.238 & 0.376 & 0 & 0
\end{bmatrix}
F = B \times U^T = (0.46, 0.30, 0.278, 0, 0) \times \begin{bmatrix}
0.9 \\
0.7 \\
0.3 \\
0.1
\end{bmatrix} = 0.763
\]

It can be seen, the score of the S Corporation’s marketing competitiveness is 0.763, locating between the excellent and good. It indicates that there is still much room for the S Corporation to improve marketing competitiveness. Evaluation results are same with the actual situation of the enterprise basically. The weight of S Corporation in product innovation and development is 0.3, brand management is 0.29, supply chain is 0.18, customer relationship management is 0.23, showing that the index system and the weight distribution are rational to a certain extent. Whereas, from the score above the shortage of marketing in the S Corporation can be found: the main reasons are that brand management and marketing communications are not done well, there is no in-depth brand concept, it is difficult to achieve popularity, high reputation, most of them just stay on the surface. On the other hand, disconnected customer relationship results in lower customer satisfaction, loyalty, the loss of customers. Therefore, through the company's marketing performance evaluation, we find that the S Corporation should strengthen their marketing competitiveness in these two areas.

5 Conclusion

The evaluation index system model of marketing competitiveness of SMEs has been established to test their marketing status and identify the key factor affecting marketing competitiveness for such small and medium enterprises. It can improve the producing methods, operating methods and organizational structure etc. In the meantime, the competitiveness of marketing will be enhanced. I hope that this paper could provide a certain references for other’s study.

References


