Evaluation Model for Corporate Social Performance

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Abstract

Corporate social performance (CSP) has been under heated discussion in the society. To evaluate CSP, the thesis, firstly, started with the set-up of selection principles as to social corporate performance evaluation indexes, based on which the evaluation system was established. Then, after calculating the weight in each evaluation index by analytic hierarchy process, the evaluation model was established to explain the trend in CSP evaluation researches. The scientific, rational and professional evaluation model has provided an alternative for further researches on CSP and on theories of citizenship.

Keywords: Corporate Social Performance, CSP evaluation index system, Second-level Indexes.

1. INTRODUCTION

Since 1990s, researches have been conducted on theories of corporate citizenship (Clark, 1916), which have gradually been applied in corporate management and replaced the concept of corporate social responsibility (Bowen, 1953). As far as corporates' social responsibility is concerned, there are still a number of management problems related to CSP in the practices of corporates. As many as the theories there may be, though, much work still has to be done to put the theories into practice and many procedures have not been implemented. An analysis on evaluating CSP enables an understanding of the development of CSP activities and a scientific and rational assessment so as to provide a foundation for corporates’ development and for measuring corporates in the society.

2. CORPORATE SOCIAL PERFORMANCE EVALUATION INDEX SYSTEM

2.1 Principles in setting up index system

In order to have an objective, fair, rational, comprehensive and scientific evaluation of CSP, certain selection criteria must be followed in selecting evaluation indexes to ensure a comprehensive, scientific and systematic CSP evaluation system.

2.1.1 Scientificity

Scientificity means that the CSP evaluation indexes chosen should have scientific theories as its foundation. The weight in every index has to be scientifically calculated. Besides, the data chosen is supposed to be sorted out in a scientific way and managed strictly, through which, we can have a scientific and precise analysis and CSP evaluation. At the same time, the evaluation indexes chosen should be independent so as to avoid overlapping indexes.

2.1.2 Systemization

CSP evaluation is systematic, for a combination of overall and local evaluation is needed in order to optimize the system. Therefore, when selecting CSP indexes, we have to take the role and the constitution of the indexes in the evaluation system into account. Then, we should study the relationships between every index, and select or remove indexes by comparing the impacts they have on each other. By doing so, we can make sure the evaluation indexes highlight the important bits, maintain the balance and uniformity of the evaluation system and realize the optimization of the whole system.
2.1.3 Operability

The evaluation indexes of CSP should be able to be calculated both qualitatively and quantitatively with objective statistics as its basis. In addition, the statistics relating to the indexes should be able to be obtained through certain ways, which, therefore, makes sure the evaluation process continues. Otherwise, the CSP evaluation system established is meaningless and not pragmatic.

2.1.4 Combination of Comprehensiveness and Local Highlights

A CSP evaluation system has to be able to reflect various CSP indexes and relevant links, so it can demonstrate comprehensive corporate social performance. There are many factors affecting CSP, which, therefore, requires the evaluation system include every main factor having a bearing on CSP and evaluate from different aspects. However, a comprehensive system doesn’t mean that it has to cover every detail, because CSP evaluation cannot cover all the aspects of the corporate. Thus, it is necessary to focus on the key problems.

2.2 Corporate social performance index system

Table 1CSP evaluation index system and weight in each index

<table>
<thead>
<tr>
<th>Objective</th>
<th>First-level Index</th>
<th>Weight</th>
<th>Second-level Index</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Survival of Corporates (A)</td>
<td>0.372</td>
<td>Shareholder (A₁)</td>
<td>0.540</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Creditor (A₂)</td>
<td>0.297</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Manager and Employee (A₃)</td>
<td>0.163</td>
</tr>
<tr>
<td></td>
<td>Corporate’s Safe Operation (B)</td>
<td>0.249</td>
<td>Client (B₁)</td>
<td>0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Supplier (B₂)</td>
<td>0.250</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dealer (B₃)</td>
<td>0.250</td>
</tr>
<tr>
<td>Corporate Social Performance Evaluation (P)</td>
<td>Corporate Society’s Sense of Belonging (C)</td>
<td>0.187</td>
<td>Government Department (C₁)</td>
<td>0.455</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Audit Department (C₂)</td>
<td>0.141</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>News Media (C₃)</td>
<td>0.141</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Community (C₄)</td>
<td>0.263</td>
</tr>
<tr>
<td></td>
<td>Corporate Society Showing its Respect (D)</td>
<td>0.119</td>
<td>Philanthropy (D₁)</td>
<td>0.400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Resources and Environment (D₂)</td>
<td>0.600</td>
</tr>
<tr>
<td></td>
<td>Corporate’s Self-fulfillment (E)</td>
<td>0.073</td>
<td>Product and Service Innovation (E₁)</td>
<td>0.540</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Employment Growth (E₂)</td>
<td>0.297</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Economic Growth (E₃)</td>
<td>0.163</td>
</tr>
</tbody>
</table>

According to Maslow’s hierarchy of need (Grzegorz, 2016) corporate citizenship theories, a corporate is considered as a whole from a broader perspective. From this perspective, society is constituted of a variety of corporates, which are animate in social activities and have rights and obligations. The corporates, in various business and production activities as well as social activities, keep pursing spiritual and material satisfaction. Thus, when evaluating corporate social performance, we can start with the needs of people in the society, and then measure the level of a corporate’s social performance by evaluating the needs of the corporate. Taking these into account, the analysis and selection of CSP evaluation indexes can be conducted from the following five aspects:

2.2.1 Indexes for Corporate’s Survival

For a corporate to survive, there are three indexes required: the index representing shareholders’ needs, the index representing creditors’ needs and the index representing the needs of corporate managers and employees.

2.2.2 Indexes for Corporate’s Safe Operation

The indexes required for safe operation are: the index for the needs of corporate clients, the index that for corporate suppliers’ needs and the index for dealers’ needs.
2.2.3 Indexes for Corporate Society’s Sense of Belonging

The indexes for corporate society’s sense of belonging are: the index meeting government departments’ needs, the index meeting the needs of audit department, the index meeting the needs of news media and the index meeting communities’ needs.

2.2.4 Indexes Showing Corporate Society’s respect

The indexes for corporate society to show its respect are: the index representing the needs of philanthropy and the index for resources and environment.

2.2.5 Indexes for Corporate’s Self-fulfillment

The indexes for corporate’s self-fulfillment are: the index for product and service innovation, the index for employment growth and the index for economic growth.

Taking the relationships between each index into consideration and based on the statistics from questionnaire, Table 1 shows the weight in each evaluation index of CSP evaluation system calculated by analytic hierarchy process.

3. CORPORATE SOCIAL PERFORMANCE EVALUATION

The evaluation results were measured by five levels, that is, excellent, good, fair, poor and very poor (Li, 2015). Meanwhile, all the second-level indexes in the CSP evaluation system were also divided into five levels in a similar way. More details are presented in Table 2.

<table>
<thead>
<tr>
<th>Second-level Index</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shareholder (A₁)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Creditor (A₂)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Manager and Employee (A₃)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Client (B₁)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Supplier (B₂)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Dealer (B₃)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Government Department (C₁)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Audit Department (C₂)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>News Media (C₃)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Community (C₄)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Philanthropy (D₁)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Resources and Environment (D₂)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Product and Service Innovation (E₁)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Employee Growth (E₂)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Economic Growth (E₃)</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
</tbody>
</table>

Levels of the corporate social performance were determined by expert evaluation method, and, on the basis of the results, fuzzy evaluation matrix of each index was established (Han, 2005).

For example, the evaluation for i-th second-level index is \( r_{i1}, r_{i2}, r_{i3}, r_{i4}, r_{i5} (i=1,2,...,m) \). Therefore, the corresponding fuzzy evaluation matrix of first-level indexes is:

\[
R = \begin{bmatrix}
  r_{11} & r_{12} & \cdots & r_{15} \\
  r_{21} & r_{22} & \cdots & r_{25} \\
  \vdots & \vdots & \ddots & \vdots \\
  r_{m1} & r_{m2} & \cdots & r_{m5} 
\end{bmatrix}
\]
where:

\[ r_{ij} = \text{stands for the number of experts of j-th level/total number of expert} \]

\[(i=1,2,\ldots,m; j=1,2,\ldots,5) \text{ is the membership of j-th level of i-th second factor.} \]

Naturally, the fuzzy evaluation matrices of the five first-level index, namely, \( R_A, R_B, R_C, R_D \) and \( R_E \). Their vectors as to evaluation are:

\[
V_a = W_A R_A = (\mu_i, \mu_a, \mu_a) \begin{bmatrix} r_1 & r_2 & r_3 & r_4 & r_5 \\ r_1 & r_2 & r_3 & r_4 & r_5 \\ r_1 & r_2 & r_3 & r_4 & r_5 \\ \vdots & \vdots & \vdots & \vdots & \vdots \end{bmatrix} = \sum_{i=1}^{3} \mu_i t_i \sum_{i=1}^{3} \mu_i t_i \sum_{i=1}^{3} \mu_i t_i \sum_{i=1}^{3} \mu_i t_i \sum_{i=1}^{3} \mu_i t_i 
\]

\[ (2) \]

and in a similar way:

\[
V_B = W_B R_B = (\sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i) 
\]

\[
V_C = W_C R_C = (\sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i) 
\]

\[
V_D = W_D R_D = (\sum_{i=1}^{2} \mu_i t_i, \sum_{i=1}^{2} \mu_i t_i, \sum_{i=1}^{2} \mu_i t_i, \sum_{i=1}^{2} \mu_i t_i, \sum_{i=1}^{2} \mu_i t_i) 
\]

\[
V_E = W_E R_E = (\sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i, \sum_{i=1}^{3} \mu_i t_i) 
\]

\[ (3) \]

where:

\[ W_A = (0.540, 0.297, 0.163), \ W_B = (0.500, 0.250, 0.250) \]

\[ W_C = (0.455, 0.141, 0.141, 0.263) \ W_D = (0.400, 0.600), \ W_E = (0.540, 0.297, 0.163) \]

Therefore, the fuzzy evaluation matrix of corporate social performance is:

\[ R = (V_A, V_B, V_C, V_D, V_E)^T \]

and its vector as to evaluation is:

\[ V = WR = (u_A, u_B, u_C, u_D, u_E) (V_A, V_B, V_C, V_D, V_E)^T \]

where:

\[ W = (0.3777, 0.249, 0.187, 0.119, 0.173) \]

Then, the evaluation conclusion can be drawn after normalizing \( V \) and finding out the crest value with maximization principle that the level where the crest value is in is the evaluation result.

**4. SIMULATED CORPORATE SOCIAL PERFORMANCE EVALUATION**

The research conducted an investigation on the situation of a corporate’s corporate social performance, the level of which was evaluated by experts (Li, 2015). The details are presented in Table 3.
The corresponding fuzzy evaluation matrices of first-level indexes were:

\[
R_a = \begin{bmatrix}
2 & 5 & 3 & 2 & 0 \\
1 & 7 & 4 & 0 & 0 \\
4 & 7 & 1 & 0 & 0
\end{bmatrix},
R_b = \begin{bmatrix}
5 & 6 & 1 & 0 & 0 \\
1 & 8 & 2 & 1 & 0 \\
3 & 6 & 3 & 0 & 0
\end{bmatrix}
\]

\[
R_c = \begin{bmatrix}
5 & 5 & 2 & 0 & 0 \\
0 & 1 & 7 & 3 & 1 \\
2 & 3 & 5 & 2 & 0 \\
0 & 2 & 5 & 4 & 1
\end{bmatrix},
R_d = \begin{bmatrix}
0 & 0 & 6 & 4 & 2 \\
0 & 2 & 8 & 2 & 0 \\
3 & 6 & 3 & 0 & 0
\end{bmatrix},
R_e = \begin{bmatrix}
0 & 3 & 6 & 3 & 0 \\
0 & 4 & 6 & 1 & 1 \\
1 & 4 & 4 & 2 & 1
\end{bmatrix}.
\]

The fuzzy evaluation matrix of social performance of the corporate in question was:

\[
R = \begin{bmatrix}
2.029 & 5.920 & 2.971 & 1.080 & 0.000 \\
3.500 & 6.500 & 1.750 & 0.250 & 0.000 \\
2.557 & 3.365 & 3.917 & 1.757 & 0.404 \\
0.000 & 1.200 & 7.200 & 2.800 & 0.800 \\
0.163 & 3.460 & 5.674 & 2.243 & 0.460
\end{bmatrix}.
\]

Then, the corresponding vector as to evaluation was:

\[
V = WR = (2.116, 4.845, 3.544, 1.290, 0.204)
\]

where:

after normalization, \(V' = (0.176, 0.404, 0.295, 0.107, 0.017)\).

According to maximization principle, the corporate’s social performance was evaluated as good.

**Table 3** Evaluation of Second-level Index of A Corporate’s Social Performance By Expert Panel

<table>
<thead>
<tr>
<th>Second-level Index</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shareholder (A_1)</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Creditor (A_2)</td>
<td>1</td>
<td>7</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Manager and Employee (A_3)</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Client (B_1)</td>
<td>5</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Supplier (B_2)</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Dealer (B_3)</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Government Department (C_1)</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Audit Department (C_2)</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>News Media (C_3)</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Community (C_4)</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Philanthropy (D_1)</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Resources and Environment (D_2)</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Product and Service Innovation (E_1)</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Employment Growth (E_2)</td>
<td>0</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Economic Growth (E_3)</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
5. CONCLUSION

Fuzzy comprehensive evaluation is a popular evaluation model now and the way it evaluates is scientific, rational and plausible. In the model, the weight in each index, generally, is calculated by analytic hierarchy process, which is subjective. In addition, the level evaluation is made by experts in accordance with the actual situation, which is uncertain. Therefore, we can, according to the key problems, adjust the model without affecting its overall performance.

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REFERENCES