

# Corporate Sustainable Development Assessment Base on the Corporate Social Responsibility

Sun Mei, Nagata Katsuya, and Onoda Hiroshi

**Abstract**—With the resource exhaustion, bad affections of human activities and the awakening of the human rights, the corporate social responsibility became popular corporate strategy achieving sustainable development of both corporation and society. The issue of Guideline of Chinese Corporate Social Responsibility Report promotes greatly corporation to take social responsibility. This paper built the index system according to this guideline and takes the textile industry as an example, uses the analytical hierarchy process to identify the weightings of different responsibilities of corporation to guide the corporate social responsibility performance assessment.

**Keywords**—Sustainable development, analytical hierarchy process, index system, corporate social responsibility

## I. INTRODUCTION

THE concept of sustainable development, which appeared in the international scene for the first time in 1987, achieved even more widespread recognition in 1992 at the United Nations Earth Summit in Rio de Janeiro, with the publication of Agenda 21. This agreement, signed by 178 nations, sets guidelines for humanity to adopt in the 21st century in order to maintain social and economic development in a livable environment[1]. For the business enterprise, sustainable development means adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing the human and natural resources that will be needed in the future[2].

With the resource exhaustion, bad affections of human activities and the awakening of the human rights, the traditional corporate goal- profit maximization is facing challenge. Corporate governance model becomes popular which is trying to achieve a greater balance of interests between shareholders and other external stakeholders including creditors, employees, the community, the environment, etc. the kind of corporate governance model are called corporate social responsibility (CSR). The goal of CSR is sustainable development. Under the guide of CSR perspective, the company takes the preserving environment, resource and Cultures, preserving the right of people and future generations, keeping biodiversity, promoting a reduction in social inequalities and others into account, and establishes business goal and makes decision to achieve the company sustainable development compatible with society's sustainable development. In recent years, the relative investment, socially responsibility investment which is also named as sustainability investment is booming. According to the report published by EuroSIF, the level of socially

responsible investing assets globally is at the level of approx. 7 trillion euros in September 2010, the value of SRI in 2008 was around 5 trillion euros, which implies almost 40 percent increase in two years. The researchers and research organizations in many counties begin to do the research about the corporate socially responsibility. There are about 60 main research organizations of social responsibility and socially responsibility investment in the world. And to improve the quality, promote the transparency of CSR research, and to facilitate procedure for control and compliance, the initial version of the standard of quality of CSR research (CSRR-QS1.1) are approved in October, 2003 in Europe. The present version is the CSRR-QS2.1 was approved in April, 2008. This guideline promotes the work of CSR research. In china, the RLCCW is the only independent CSR research established in 2007. It aims at become the Chinese KLD. However, up to now, it mainly does the ranking of CSR report, not the ranking of CSR performance. The other CSR performance awards are granted generally by the government office or magazine and other news media. And the assessment methods and criteria are not enough transparent. Therefore, the ranking results are lack of public trust. To promote the Chinese CSR and provide an easily used tool of CSR assessment, this paper will use the Analytic Hierarchy Process in to the CSR assessment and give a fair and transparent result as possible.

## II. THE LITERATURE REVIEW

Jouni Korhonen was the first person to assess and measure the corporate social responsibility from the aspects of economics, society and environment [3]. Michael Hopkins defined the meaning of corporate social responsibility, built a hierarchical structure of corporate social responsibility and conducted the evaluation research [4]. Katarína DRIENIKOVÁ and other authors used the analytic hierarchy process method in the formulating the stakeholders' strategic goals within the CSR and simultaneously its utilization in minimization environmental risks [5]. ZHU Lilong and YOU Jianxin construct and evaluate the indicators system of corporate social responsibility, and found that Economic responsibility and legal liability are the most important to the enterprises. The corporate environmental responsibility and the charity responsibility have attracted more attentions [6]. However, the economic grow model of environment pollution have been got criticized seriously in resent year, the national strategy of establishment of resource-saving and environment-friendly society was established in 2005. To help and motive company to change traditional governance model, this paper will establish an assessment system fitting to national strategy.

Sun, Mei is with the Waseda University, Tokyo, Japan. (e-mail: xiaomeisun1983@gmail.com).

Nagata Katsuya, is the Waseda University, Tokyo, Japan (e-mail: nagata@kitanet.ne.jp).

Onoda Hiroshi is the Waseda University, Tokyo, Japan (e-mail: Hiroshi-onoda@moegi.waseda.jp).

### III. CONSTRUCT THE INDEX SYSTEM BASED ON ANALYTICAL HIERARCHY PROCESS

The analytical hierarchy process (AHP) was first introduced by Professor T • L • Saaty in 1971. Since its introduction, the AHP has become one of the most widely used in multiple-criteria decision making (MCDM) problems [7]. AHP presents a complex problem as an orderly class structure, and then experts get judgment matrix by comparing the importance of the elements in the structure and obtain an order from the best to the worst after the final judgment matrix calculation [8].

#### A. Constructing index system

For CSR to be accepted by a conscientious business person, it should be framed in such a way that the entire ranges of business responsibilities are embraced. The Carroll, Archie B. thought that economic, legal, ethical and philanthropic constituted the CSR. The guideline of China CSR report indicates that the CSR includes the following aspects : market responsibility, responsibility management, social responsibility and environmental responsibility [9] . The G3 of GRI depicts that the CSR includes economic responsibility, environmental responsibility and the social responsibility. This paper will set up the criteria system according to the guideline of China CSR so that it is fit to the Chinese situation. On the other hand, because the responsibility management is not independent aspect of corporate social responsibility, it is one part of market responsibility, social responsibility and environment responsibility. So the criteria system just includes the market responsibility, social responsibility and environment responsibility.

*Social factors:* Some scholars think that, social responsibilities include the responsibility for employees (working conditions, wages, non-discrimination, etc.) and local communities (harmful effects, respect for crops), and society as a whole.

*Market factors:* In addition to the traditional market responsibility, the responsibility for customer, stockholder, supplier and partners is also viewed as the market responsibility. Some scholars think that the social responsibility includes the responsibility for the customer and supplier and government, but in fact, these responsibilities have a close relationship with the economic activities of corporate, so this paper classified the responsibility for customer, supplier, government and the stockholder into the market responsibility.

*Environment factors:* If human being wants to realize the sustainable development, it must make sure the compatibility between the sustainability of ecosystems and company's activity. It assesses the company's impacts of its products and activities in terms of resource consumption, waste production, hazardous emissions, ecosystem, etc. This index system is constituted of above three kinds of performance criteria. Because the corporate socially responsibility is all viewed as the responsibility taken for the t corporate shareholder as customer, stock holder, and supplier and so on. Therefore, to make the sub-factor clear, this criteria system is designed

according to the shareholder of corporation. This index system is constituted by 21 sub-factors as shown in the Table I

TABLE I  
THE INDEX SYSTEM OF CORPORATE SOCIAL RESPONSIBILITY

Factor	Shareholder	Sub-factor
C1-maket factor	Stockholder	C11-information disclosure
		C12-making profit
	Customer	C13-product quality
		C14-customer satisfaction
	Supplier and partner	C15-fair competition and trade
	Government	C16-lawful operation
		C17-tax payment
C2-Environment factor		C21-compliance with environment law
		C22-environment management
		C23-environment protection
		C24-energy and resource saving
		C25-biodiversity
		C26-green purchase
		C27-green technology and product
C3-Social factor	Employee	C31-lawful employment
		C32-career development
		C33-safe production
		C34-occupational Health
		C35-employee care
	Community	C36-donation
		C37-voluntary activity

#### B. Hierarchical structure

Fig. 1 illustrates the hierarchical structure; the goal of decision is achieving the better performance of CSR. The middle factors are the market factor, environmental factor and Social factor. The third level is the sub-factor. The last level of the hierarchy represents the alternative companies. Because the aim of this paper is to find a good model of the CSR assessment, not assess CSR performance of specific companies. Therefore, we omit the alternative companies in the hierarchical structure as shown in the Fig. 1.

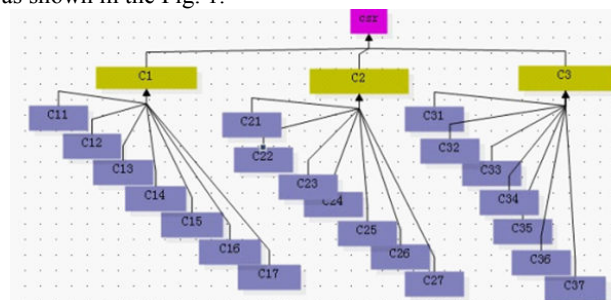


Fig. 1 The hierarchical structure of CSR performance

#### C. Pairwise comparison

Next we compared factors by pairwise comparison to identify

TABLE IV  
PAIRWISE EVALUATIONS OF SUB-FACTOR OF MARKET RESPONSIBILITY (CI=0.0091)

Items	Product quality	Customer satisfaction	Make profit	Information disclosure	Law compliance	Fair competition and trade	Taxes payment
Product quality		3	5	9	3	7	8
Customer satisfaction			3	7	1	5	6
Make profit				5	1/3	1/3	3
Information disclosure					1/7	1/3	1/3
Law compliance						6	1
Fair trade competition							1
Taxes payment							

TABLE V  
PAIRWISE EVALUATIONS OF SUB-FACTOR OF ENVIRONMENT RESPONSIBILITY (CI=0.0300)

Items	Biodiversity	Energy and resource saving	Compliance with environment law	Environment management	Environment protection	Green technique and product	Green purchase
Biodiversity		1/9	1/7	1/8	1/8	1/6	1/5
Energy and resource saving			1/5	1/3	1/4	3	7
Compliance with environment law				5	3	7	8
Environment management					1/2	6	5
Environment protection						8	7
Green technique and product							5
Green purchase							

TABLE VI  
PAIRWISE EVALUATIONS OF SUB-FACTOR OF SOCIAL RESPONSIBILITY (CI=0.0060)

Items	Safe production	Lawful employee	Occupation health	Career development	Voluntary activities	Donation
Safe production		5	3	9	3	9
Lawful employee			3	9	3	9
Occupation health				5	2	5
Career development					1	5
Voluntary activities						1
Employee care					1/5	5
Donation						

the importance of various factors. This step is very important; it will affect directly the weighting of various criteria. The Table II gives AHP measurement scale.

TABLE II  
AHP MEASUREMENT SCALE

Intensity of importance	Meaning(A compared to B)
1	A is equally important to B
3	A is moderately more important than B
5	A is strongly more important than B
7	A is very strongly more important than B
9	A is extremely more important than B
2,4,6,8	The middle situation

This study used the convergence in to find the order of the criterions importance. By this way, the ranking organization can revise timely the weighting of criteria according to the different nation situation and industry feature. On the other hand, the combination of Delphi studies and questionnaire approach make the weighting reflect the future requirement of industry development and feeling of various shareholders. this paper take the textile industry as an example, and used Delphi studies to identify the intensity of importance of 3 first level criteria for each industry; we seek for opinion of 10 doctors from Waseda University. At last all doctors reached consensus that the market responsibility, social responsibility and environment responsibility should be paid the same emphasis on. If corporation wants to achieve the sustainable development, it need take the responsibility of economic,

environment and social responsibility at the same time. No matter serious product safety accident, environment pollution or others is possible to lead to the bankrupt. And then, the questionnaire about the importance of sub-factors was developed and employee, manager, undergraduate and professor, in total 30, were required to assess the importance of every sub-factor. Each sub-factor is assigned the 0-4 in integer from the average, important, very important, and excellent important. And then calculate the average score of every sub-factor to decide the important of every sub-factor.

Pairwise evaluations of first level criteria and sub-criteria are shown in the Tables III, IV, V, VI..

TABLE III  
PAIRWISE EVALUATIONS OF FIRST LEVEL CRITERIA (CI=0.0000)

Items	Market responsibility	Environment responsibility	Social responsibility
Market responsibility		1	1
Environment responsibility			1
Social responsibility			

The tests of consistency and calculation of weighting can be done both manually and by using the software tool for solving AHP method-yaahp v0.50. Because of the limited size of this article it is not possible to describe the whole process in detail; we used the software and got the weighting of criteria as shown in the Table VII.

TABLE VII  
THE WEIGHTING OF EVERY FACTOR OF CSR

Criteria	Weighting
Product quality & safety	0.0946
Compliance with environment law	0.0929
Safe production	0.0816
Lawful employment	0.0816
Environment protection	0.0739
Customer satisfaction	0.0634
Compliance with law	0.0634
Environment management	0.0555
Energy and resource saving	0.0481
Career development	0.0474
Employee care	0.0448
Occupational health	0.0411
Make profit	0.0369
Fair competition and trade	0.031
Green technology and product	0.0288
Paying taxes	0.0254
Green purchase	0.0204
Information disclosure	0.0186
Voluntary activity	0.0185
Donation	0.0185
Biodiversity	0.0137

#### IV. CONCLUSION AND DISCUSSION

The analytical hierarchy process is a timely and dynamic method of identifying weighting of multiple factor. By this way, we can identify the specific weighting of factor for the different industries. To promote the corporate social responsibility development and information disclosure, this

paper builds a comprehensive corporate social responsibility indicators system according to the guideline of Chinese CSR report CASS-CSR1.0. through the result, we can find the product quality & safety, compliance with environment law, safe production, lawful employment, environment protection, customer satisfaction are top six important factor for the textile industry. And the paying taxes, green purchase, information disclosure, voluntary activity, donation, biodiversity are six least important factors. By the method of analytical hierarchy process, we can set up the specific index system for different industries, it will promote the fairness of corporate social responsibility assessment and make sure the sustainable development both corporation and society.

#### REFERENCES

- [1] ADEME-ORSE-EPE. A Guide to Sustainability Analysis Organization. ADEME Editions. 2001. Page.9
- [2] Business strategies for sustainable development. [http://www.iisd.org/business/pdf/business\\_strategy.pdf](http://www.iisd.org/business/pdf/business_strategy.pdf)
- [3] Jouni Korhonen. Should we measure corporate social responsibility, Corporate social responsibility and environmental management, No.10, 2003, pp.25-39.
- [4] Michael Hopkins. Measurement of corporate social responsibility, International Journal of Management and Decision Making, Vol.6, No.3/4, 2005, pp.213-231.
- [5] Katarina DRIENIKOVÁ, et al, Case Studies Of Using The Analytic Hierarchy Process Method In Corporate Social Responsibility And Environmental Risk Management.
- [6] ZHU Lilong and YOU Jianxin, Construct and Evaluate the Indicators System of Corporate Social Responsibility, p4
- [7] T.L Saaty, The Analytic Hierarchy Process. New York: McGraw-Hill, 1981.
- [8] Yingchen WANG.et al. Research of AHP Model on Combination between the Social Responsibility and the Economic Benefits in Corporation, 2008 International Seminar on Business and Information Management, 2008.
- [9] Chen Jiagui, The guideline of Chinese Corporate Social Responsibility (CASS-CSR1.0), Economic and Management, 2010