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The Assessment of The Companies' Sustainable Development Performance

AncaButnariu^{a*}, Silvia Avasilcai^a

^a*Department of Engineering and Management, Technical University, 29 MangeronBd, Iasi 700050, Romania*

Abstract

At present, the content of sustainability reports tends to appear in forms and units that are not easy to convert in comparable unitary terms. We have advanced the design of a composite index of sustainable development that would evaluate the performance of the companies as a time function and that would ensure the integration of sustainable development indicators in a relevant and useful manner. The proposed model is wished to be an advance in the assessment of the sustainability of companies. We have used the simulation method, and the impact of every indicator on the global sustainability of the company was determined with the technique of analytic hierarchy process. The model refers to the fashion in which the environmental, economic and social indicators can be associated in sub-indexes and finally in a global index of the company's performance. The results of the proposed model show that it is feasible and easy to apply at company level, although, none of the ways to express quantitatively such a complex concept as sustainable development could not be perfect. The disadvantage of the model would be that the fashion the weights of the indicators are determined is not direct and precise.

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* AncaButnariu. Tel.: +0-40232-230491; fax: +0-40232-230491
E-mail address: abutnariu@tex.tuiasi.ro

1. Introduction

The sustainability reports present a set of indicators of sustainable development that can be used in order to assess the sustainability performance of a company. They transform the sustainability aspects in quantifiable values of economic, environmental and social performance, with the main purpose to help solving the key preoccupation for sustainability and to provide information on the fashion in which the company contributes to sustainable development.

A well-defined necessity was identified to develop a comprehensive framework of sustainability criteria that focus on the performance of every industrial sector and even more specific, to evaluate the sustainability of the companies. Tens of indicators were suggested for the assessment of the improvement of a manufacturing process, of an industrial location or of a company. But none of these regulations represents an attempt to create aggregate measures that could be used for a facile comparison, for example, to assess the development of the companies using a composite index that renders simplified and quantitatively expressed information about their environmental performance (Perrini and Tencati, 2006).

In the last years, the international research focused on the development of composite indexes, mainly for comparisons between states regarding their economic, environmental and social progress. Despite these evolutions, there still is not available a useful method to assess the integration of sustainability at company level. In order to face the challenges of sustainability, an approach of an integrated assessment of the companies is necessary to provide a good guidance in decision making. Although the canon of indicators aggregation to assess the company was accepted, the methods of aggregation are still insufficiently developed or are not available for all the aspects of sustainability (Sikdar et al., 2012).

Within this context we have proposed the design of a composite index of sustainable development that would evaluate the performance of the companies as a time function, which ensures the integration of the sustainability indicators in a relevant and useful manner for making the decisions.

2. A model for the integration of the sustainability indicators

The proposed model reduces the number of the indicators by aggregation in a composite index. The procedure of the calculation is divided in several phases. For the beginning, the appropriate indicators are selected in groups of economic, environmental and social indicators. The indicators with positive and negative effect are taken into consideration: for example, a raise of the air pollutant emissions per unit of product has obviously a negative impact, while a bigger operational profit has a positive effect on the economic performance of the company.

The main problem of the indicators' aggregation is the fact that they are expressed in different units. A way to solve this problem is the normalisation of each indicator using the equations (1) and (2). To increase transparency of performance and to increase credibility, we suggest that all data to be afterwards standardized and / or aggregated towards specific indicators to suit particular information needs (Fig.1). Grouping is strongly connected to the selection of indicators. Selected indicators are grouped according to the main aspects of sustainability (economic, $j = 1$, environmental, $j = 2$, and societal group of indicators, $j = 3$). For each group j , indicators i of positive performance (I_{ji}^+) in the perspective of sustainability are considered (i.e. indicators whose increasing value has a positive impact to SD). Indicators of negative performance towards SD (I_{ji}^-) are also determined at this stage (Krajnc and Glavic, 2005).

$$I_{N,ijt}^+ = \frac{I_{A,ijt}^+ - I_{\min,jt}^+}{I_{\max,jt}^+ - I_{\min,jt}^+} \quad (1)$$

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