

# **Analyses of Corporate Environmental Management: Methodological Aspects**

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## **1. Introduction**

Human activities cannot avoid influencing conditions in the natural environment one way or the other. This includes as well common activities in the business sector. But during the past few decades, environmental disasters in Seveso and Bhopal, and the Exxon Valdes oil spill in Alaska have contributed to an increasing awareness of the effect of business activities on the physical environment. To assist companies reduce, evaluate, monitor and control their environmental impact the concept of corporate environmental and resource management has been developed. Implementation of this concept in business presents a challenge to management, however, since it implies a fundamental change in some of the ways of operating a company. This paper will briefly discuss how information on the actual extent of environmental management in Danish companies and the way it is applied has been collected based on an elaborated sample survey methodology as well as the statistical approach applied in analyzing this information.

## **2. Survey Methodology**

Information on application of corporate environmental management in Danish companies has been collected by a questionnaire based survey procedure three times during the last decade: 1) Summer 1994, 2) Autumn 1995 and 3) Autumn 1999. The first and last survey focused on industrial companies only whereas the middle one included all types of companies. All surveys were based on a sample of companies with more than 10 employees drawn from an electronic database. As no systematic pattern was present in the registrations of the database the sample was drawn using a random procedure. The advantage of using this source is that information of the sampled companies like address etc is direct available in an electronic form when posting the questionnaire and that a number of company characteristics like type of company and turn over can be sampled directly as well. The initial sample consisted of some 500 companies. As a result of a

telephonic pre-notification procedure with the purpose of identifying the person in the companies responsible for environmental matters and achieve his/her commitment to participate in the survey and complete and return the questionnaire, the response rate was approximately 65% in all three surveys.

### **3. The Statistical Approach**

The information collected by the questionnaire based survey approach can be analyzed in a variety of ways to characterize the actual situation of corporate environmental management in Danish companies as well to contrast the results with different aspect of managerial theory in general. An example of the first situation is basic tabulations to describe the overall situation of application of the various elements in corporate environmental management (see Madsen & Ulhoi, 1999). The overall result in such tabulations can be further broken down to contrast different types of companies like reactive versus proactive ones (see Madsen & Ulhoi, 1996). Another example is to carry out a more detailed analysis of the underlying structure in the information by means for a factor analysis to identify drivers in introducing environmental management (see Madsen & Ulhoi, 1997). As an example of the second kind of analyses the evaluation of environmental management practice in relation to the theory of stakeholder management can be mentioned (see Madsen & Ulhoi, 2001). Statistical techniques like profile analyses have been applied as well especially when differences in types or size of companies can be expected in characterizing attitudes and the degree of environmental initiatives. Furthermore it is considered to apply structural equation models in order to obtain a deeper insight into potential relationships.

### **REFERENCES**

- Madsen, H.; Ulhøi, J.P. (1996), Environmental Management in Danish Manufacturing Companies: Attitudes and Actions, *Business Strategy and the Environment*, **5**, 22-29.
- Madsen, H.; Sinding, K.; Ulhoi, J.P. (1997), Sustainability and Corporate Environmental Focus: An Analysis of Danish Small and Medium Sized Companies, *Managerial and Decision Economics*, **18**, 443-453.
- Madsen, H.; Ulhoi, J.P. (1999), Industry and the environment: a Danish perspective, *Industry and Environment*, **22**, 35-37.
- Madsen, H.; Ulhoi, J.P. (2001), Integrating Environmental and Stakeholder Management, *Business Strategy and the Environment*, **10**, 77-88.

### **RESUME**

Il est généralement reconnu que les méthodes statistiques ont leur rôle à jouer dans l'analyse et la surveillance des situations environnementales. Or, dans la gestion environnementale relative aux activités commerciales, on a peu entrepris dans ce domaine jusqu'ici. Voilà pourquoi un projet de recherches danois vise à établir la base pour construire un baromètre qui peut indiquer la situation environnementale et le résultat d'initiatives environnementales faites par des organisations commerciales.