

# Chapter 19

## The Improvement of Environmental Performance in the Nonprofit Sector through Informatics

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### ABSTRACT

*The purpose of the present chapter is to demonstrate how an econometric application supported by the use of simple software can augment an environmental nonprofit organization's (ENPO) environmental performance. An ENPO, whose scope of operation is the protection of natural resources, usually deals with the problem of how to reduce its negative environmental impact without sacrificing the positive one resulting from its work. This chapter argues that the application of cointegration analysis on available time series environmental data can offer an indication for the policy decision-making in terms of such a contrast in impacts. If the time series are not cointegrated, then the ENPO can reduce its negative environmental impact without affecting the positive one. If they are cointegrated, then alternative policies have to be designated for dealing with the negative impact.*

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## INTRODUCTION

There is a growing interest in the literature about the accountability of the Non Profit / Non Governmental Organization (NPO/NGO) sector (Gray et al., 2006; Jepson, 2005; Lehman, 2007; O'Dwyer & Unerman, 2008; Unerman et al., 2007). These organizations have a significant role in society by undertaking social or environmental actions (Speckbacher, 2003). However, public interest about their accountability emerged during the nineties, mainly due to the fact that some environmental organizations in this sector had increased their revenue sources and transformed themselves into organizations which resembled multi-national corporations (Jepson, 2005). Edwards (2004) points out that this sector, before challenging the accountability of other social actors, must also be accountable itself. The Global Reporting Initiative (GRI) (Hedberg & von Malborg, 2003; Willis, 2003) confirms this growing interest by stating in its website (GRI, 2009) that 'the rise of the third sector has led to an increasing demand for greater accountability from nonprofit organizations'. For that, it has set guidelines for NPOs which will promote economic, social and environmental accountability through the issuing of sustainability reports (their final version is available since June 2010 on <http://www.globalreporting.org>).

Nonprofit sector undertakes actions which have significant positive impact on the environment. On the contrary, in order to do so, it has to use materials and energy which result in a negative impact on the environment (Dart & Hill, 2010). In this way, according to Gale (2006) and Jasch (2009), NPO sector increases its non product output, that is waste and emissions. It mainly consists of organizations which belong to the service sector, where all the materials and energy used, become waste and emissions. This non product output is transformed into an externality for which the society has to bear the cost, if it is not internalized by the organization (Howes, 2004). Dart & Hill (2010) note that even if in the individual level of

a single NPO its environmental impact may seem as minutiae, the cumulative impact of the whole sector is real important. For example, according to the same authors, in countries like USA, where the 80% of the gross domestic product (GDP) and the 37.6% of the total greenhouse gas emissions come from the service sector, the message is clear: "the nonprofit sector creates environmental impacts that merit attention" (Dart & Hill, 2010, p. 297). There is also a number of scholars who believe that the social and environmental accountability of the NPO sector can be augmented through the use of Social and Environmental Accounting and Reporting, and Corporate Social Responsibility practices (Richmond et al., 2003; Seitanidi, 2005; Seitanidi & Crane, 2009). Dart & Hill (2010) believe that since NPO sector focus on prosocial values, one would expect that the environmental values were important and well explored in it. Therefore, the sector should try to improve its environmental performance, even if it is known that every negative impact on the environment is created due to positive work for the society or the environment.

The present chapter argues that in ENPOs it is usual to have a contrast in environmental impacts, the positive and the negative one. A positive impact on environmental issues depends much or less on a negative impact on the environment. However, the ENPO should not rely only on the creation of the positive one, but also find ways to minimize the negative one. It is argued here that this relationship of impacts can be modelled using cointegration analysis, a methodology of manipulating two or more time series data, which stems from the science of econometrics (Granger & Newbold, 1974; Engle & Granger, 1987; Johansen, 1988; Pesaran & Pesaran, 1997). In this way, an NGO can be helped in its policy decision making and augment its accountability to the society.

In order to test for this hypothesis, data from the NPO/NGO "Hunting Federation of Macedonia and Thrace" were used. In this organization the "Federal Gamewarden" has operated since 2000.

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