

## Chapter 2

# Environmental Efficiency Analysis of Bus Transport in Italy: SMEs vs. Large Companies

**Simona Alfiero**

*University of Turin, Italy*

**Massimo Cane**

*University of Turin, Italy*

**Ruggiero Doronzo**

*University of Turin, Italy*

**Alfredo Esposito**

*University of Turin, Italy*

### **ABSTRACT**

*Urban public transport seeks the mobility of citizens within the municipal area, and it is a service whose importance is on the increase as a consequence of the ever more dynamic changes in life and work. This chapter analyzes companies that provided services for Italian cities in 2010, estimating the environmental efficiency for the service, using DEA (data envelopment analysis) technique. In the Italian context, both large enterprises and SMEs operate, and this study compares whether the differences in efficiency levels can be explained in terms of the type of company.*

## INTRODUCTION

Urban transport provides residents with mobility in municipal areas and this increasingly important service is a consequence of far reaching changes in lifestyles and work patterns. As residential areas spread into the outskirts, businesses re-locate into industrial estates and university faculties create out-of-town campuses, there is greater need for access which public transport must provide.

There has often been a lot of focus on the economic outcomes of transport issues, but less consideration given to social and environmental aspects, like transport emissions.

Public transport is a means for people to move around a town efficiently with the least impact on the environment and help reduce, for instance, CO<sub>2</sub> emissions.

During the last few decades, sustainability - and in particular the environmental issue - has become a variable that needs to be analysed and measured (Carpenter, 1993).

This chapter addresses two related themes concerning “good” and “green” urban transport with particular reference to the provision of urban bus services in Italy.

The first theme examines the way public urban transport providers can measure efficiency: in particular, the chapter considers the theoretical and practical issues that an urban transport provider could encounter when benchmarking the situation.

The results of empirical studies concerning the efficiency of public services indicate that private sector participation in public services has generally improved the efficiency of those services (as suggested by property rights and public choice theory). However, the effects are largely dependent on other governance arrangements (e.g. contracts) and the particular industry context (e.g. level of competition).

In Italy, externalisation of public services favoured different forms of governance: private corporations, outsourcing, public-private partnerships and privatisation (Doherty & Horne, 2002; Torres & Pina, 2002; Crediop, 2004; Reichard, 2008; Keune et al., 2008). The urban bus services sector was also subject to externalisation and today the sector is characterised by the presence of large companies (mostly public-private partnerships) and small-medium enterprises (SMEs), ie private companies.

The second theme considers the differences in behaviour of small-medium and large companies and how these differences can be a means of explaining the disparity in attitude by transport providers to the potential benefits of benchmarking.

This is important because understanding what is best quality performance and attempting to move towards an industry best is one of the most secure ways of ensuring the provision of quality services in a sustainability stable environment.

There is a plethora of management models and ideas which can be used in a business context to improve business performance. Benchmarking has been a key tool in the business improvement armoury for many years.

Benchmarking is a way of measuring how good the business is at what it does, making a quantitative statement as to whether its performance is as good as other businesses and using this information to improve its business process. Benchmarking, then, is a tool for finding an industry’s best practices, leading to improvement in performance. Benchmarking can be applied widely and can cover all aspects of measurable activity: it could cover both inputs (internal efficiency) and outputs (revenue and passenger responses) in an urban bus context.

After having carried out some benchmarking, the organisation will have acquired an in-depth knowledge of itself. The benchmarking measurement process provides a baseline data set for improvement

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