

EWEPA XX

# BOOK OF ABSTRACTS

## TENTH EUROPEAN WORKSHOP ON EFFICIENCY AND PRODUCTIVITY ANALYSIS

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*Efficiency and Productivity Analysis:  
Retrospect and Prospect*

Organised by  
GAPEM  
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# Comparison of Two Alternative Store Formats using a Malmquist-Type Index

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## **Session 14 E Marketing Performance**

Friday, June 29, 2007 16:00 - 17:30

Building A - First Floor - Room A120 E. MALINVAUD

This paper explores the differences in performance between two groups of retailing stores that operate with different formats. The study uses a Malmquist-type index to distinguish internal inefficiencies from those associated with the group (or format) characteristics. A fundamental characteristic of the new index is to compare groups in a static setting. The study described in this paper combines the use of the Malmquist index with statistical tests. The Malmquist-type index is decomposed into sub-indexes for comparing the efficiency spread between groups and the productivity differences between the best-practice frontiers of the groups. The hypothesis tests are used to verify if the differences between groups captured by the Malmquist-type index and its components are statistically significant. There are several methods based on DEA for comparing the performance of two groups, such as the program efficiency method and the comparison of efficiency distributions using statistical hypothesis tests. The method used in this paper is compared with the existing approaches to highlight its strengths and weaknesses. The applicability of the method is illustrated with a case study that compares the performance of heavy bazaar stores (that sell electrical appliances and consumer electronics) with different formats (megastores versus superstores). The study showed that the overall performance of megastores is better due to the effect of a more productive frontier. However, the efficiency spread is larger in megastores than in superstores meaning that there is scope for efficiency improvements.