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# Evaluation of the Technical Efficiency of Export: Data Envelopment Analysis Approach

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## Abstract

Export performance in small and medium-sized enterprises (SMEs) is a source of regional development. It also enables enterprises to enhance their competitiveness and to support in long term their sustainability. In light of its importance, the export performance has long been a central topic in the literature in international marketing. However, this concept reveals several limitations about its definition or its measurement, in particular the technical efficiency aspect. This paper contributes to provide a new approach on the evaluation of the export technique. In our context, an enterprise is regarded as technically efficient in the export if it processes its various resources and capacities in optimal manner into better export results. In this investigation, we use a non parametric approach that is the data envelopment analysis (DEA) model. Indeed, this method allows to separate the efficient to the inefficient techniques in the export domain by aggregating multiple inputs with multiple outputs.

*Keywords:* Export Process, Performance, Efficiency, Data Envelopment Analysis.

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## 1. Introduction

Accordingly the increasing globalization and intensifying competition of markets, export performance continuously becomes the crucial factor both for national and enterprises growth. Furthermore, considering the strategic role played by SMEs in economies and their important unused potential in export, it appears essential to evaluate their performance on international markets. Despite the fact that the export performance has long been a central topic in the literature in international marketing (Sousa et al., 2008; Sousa, 2004; Katsikeas et al., 2000), this concept reveals several limitations about its definition or its measurement, particularly in case of its efficiency dimension. In literature, export performance defined, in the most common form, as the output of firms activities in export market (objective), as managerial satisfaction with export performance (subjective). These measurements can be also called output or workload, report how many units of export were realized or how much of an activity was undertaken. They are extremely limited in what they can say about the quality or efficiency of the export. The only message of workload measures is enterprise is busy in export! and cannot be enterprise is efficient in export. In this work, we evaluate efficiency export that refers getting the most output (export) without using more resources and capacities (doing things right).

In fact, to increase export at national and regional levels, theories of international trade suggest two initiatives: 1) push non-exporters to enter the export markets (self-selection effect) and 2) encourage exporting firms to export more (learning-by-exporting) (Greenaway and Kneller, 2007; Wagner, 2007). A significant number of theoretical and empirical works are studied self-selection effect and then present innovation supporting and productivity increasing as the key factors of the export market entry (Movahedi and Gaussens, 2012, 2016). However, the question of how export more does not be enough analyzed by leaning-by-exporting works. However, promote exporting enterprises to use all their capacity to export is a preoccupation of public authorities to balance the results of foreign trade. If we recognize that the expansion of exports depends for most of enterprise itself, it is reassuring that they have mostly many means to improve their performance in foreign markets. Many enterprises are content to cream off the markets where they have entered, instead of developing them further. These enterprises can significantly develop in foreign markets, by implementing a more rational and efficient their innovation, financial, human capital, and technological

resources.

The purpose of this paper is to offer new conceptual, operational, and mythological framework to export performance evaluation and to build a working tool for all actors involved in the conduct of international affairs of enterprises. The diagnostic assess the strengths and weaknesses (efficiency) of the exporting enterprise in export and suggest lines of corresponding development that will advance the positions already held in export markets. In other words, is the company makes optimal use of its export potential in the realization of export? and the use of what resources and capacities are to be optimized? To this end, we use the (Data Envelopment Analysis) DEA method using financial.

The DEA method allows a quantitative evaluation of the performance of Decision Making Units (DMUs) using multiple inputs and producing multiple outputs. DEA method provides a synthetic, reliable, and original analysis of performance taking into account several dimensions simultaneously and determines the efficiency frontier in terms of best practice. The results of DEA method draw exporting enterprise with the best practice among all enterprises of the study population, the distance at which each enterprise is compared to the efficiency frontier, and realistic goals to achieve better practice. For the empirical analysis, we use the financial data of population of the SMEs enterprises of Normandy regional in France.

This paper is organized as follows. In section 2, we provide the conceptual framework including the theoretical background of international trade and of international marketing, and the literature review on the export performance. In section 3, the research methodology and our data are presented. The findings are then discussed in section 4 and the article concludes with the suggestions for future research.

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