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## Introduction to Data Envelopment Analysis for Logistics

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### DATA ENVELOPMENT ANALYSIS (DEA)

Introduced by Charnes, Cooper and Rhodes in 1978, the Data Envelopment Analysis is an important branch of operations research, as well as of economics as evidenced by numerous publications (Emrouznejad, 2008) with practical applications and theoretical developments on little more than three decades (Cook & Seiford, 2009).

DEA can be described as a nonparametric technique based on linear programming to evaluate the efficiency of organizations working in the same industry, for example, schools, banks, factories and utilities. However, among different applications there are several logistic and transportation related decisions that can be analyzed using this approach (Panayides, 2009; Monireh, 2019; Rashidi, 2019).

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### THE WORKSHOP

This three-hour workshop enables a practical understanding to use DEA, providing the basic theoretical framework and illustrating its application in modeling and solving illustrative examples related to logistics and transportation problems.

The workshop aims to allow the attendants to learn how to model and solve problems using DEA, with this purpose course participants will learn how to implement some of the introduced models using R (<https://www.r-project.org/>), for this practical session, participants will receive step by step directions, from the fundamentals to use R to the specific commands to use the required libraries or packages, so previous experience in R is not needed.

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### WHO SHOULD ATTEND?

The seminar is intended for students as well for academic and business researchers and practitioners looking for basic understanding for application of Data Envelopment Analysis (DEA) as a decision support tool for logistic problems where efficiency and performance metrics may help in the assessment, selection and assignment among different companies, agencies or suppliers.



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