

# Presenting a Grey DEA method for Performance Evaluation of Tehran Province Vocational Organization

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**Abstract**—DEA (Data Envelopment Analysis) is a model for ranking Decision Making Units, which uses some inputs and outputs. DEA establishes a best practice group among a set of observed units and identifies the units that are inefficient. If our knowledge about the inputs or outputs is not complete or accurate, it will be better to use Grey numbers. In this paper we use Grey DEA to rank the Decision Making Units and evaluate their performances. Part ۱ is introduction, part ۲ is literature review, in part ۳ we present the method, part ۴ is numerical Example and the last part is conclusion.

**Keywords:** Performance Evaluation, DEA, Grey theory, Ranking.

## 1. INTRODUCTION

Performance evaluation is necessary for every organization. Comprehensive Performance evaluation can help the organization to compensate its faults and improve.

This aim has several methods such as analytic hierarchy process (AHP), analytic network process (ANP), Multiple Criteria Decision Making (MCDM), artificial neural network, ratio analysis, total production analysis, regression analysis, Delphi analysis, evaluation laboratory (DEMATEL), balanced scorecard (BSC), Data Envelopment Analysis (DEA), etc.

Each organization chooses its proper method to evaluate.

In this paper we do the performance evaluation with DEA which is a nonparametric method and measures the ratio of input and output among homogeneous decision-making Units. Also it can work when the problem deal with multiple inputs and multiple outputs.

Measuring performance sometimes accomplishes using a financial ratio combined with parametric or non-parametric analyses. Non-parametric analysis does not involve the use of a priori assumptions. So it avoids subjective weight assignments. That is why we use DEA in this paper.

DEA establishes a best practice group among a set of observed units and identifies the units that are inefficient.

A wide range of factors can influence performance evaluation.

Both financial and non-financial indices have strengths and weaknesses in terms of practical.

Based on the literature review, corporate performance evaluation needs to take into account corporate types, regions, and economic circulations. To obtain a quick response, we usually can not guarantee data sufficiency and confirm the

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