

Efficiency analysis in network process with stochastic data

Saber Mehdizadeh*, Dr. Sohrab Kordrostami,

Stochastic Data Envelopment Analysis (SDEA) is a technique based on stochastic programming for performance evaluation of a set of decision-making units (DMUs). Estimation of efficiency and productivity for a DMU in the future, help managers to address weaknesses in their performance in order to increase the level of efficiency and adopt different strategies. In this thesis by a careful reviewing of the classic SDEA models, the stochastic network DEA models in two forms of cooperative and noncooperative game theory concepts have been discussed and some theorems and their proofs have been presented. In the form of cooperative games, the leader-follower concept by considering several aspiration levels and confidence levels has been used. The results of applying these two forms to real data suggest that their perceptions of the stochastic and deterministic models are different. In addition, the calculation of stochastic scale elasticity of DMUs has been investigated using stochastic cost efficiency. Also, the scale elasticity, given the impact of factors such as budget deficits or resources limitation that lead to increased or decreased production levels, has been examined.

Keywords : Coverage Analysis, Random Technical Data, Random Programming, Performance, Decision Making Units

[Islamic Azad University, Rasht Branch - Thesis Database](#)
[دانشگاه آزاد اسلامی، واحد رشت - سامانه بانک اطلاعات پایان نامه ها](#)