

Integrating Data Envelopment Analysis and Variance Inflation Factor to Measure the Efficiency of Decision Making Units

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Abstract : This paper proposes an integrated Data Envelopment Analysis (DEA) and Variance Inflation Factor (VIF) model for measuring the technical efficiency of decision making units. The model is validated using a set of 69% sales representatives' dairy products. The analysis is done in two stages, in the first stage, VIF technique is used to distinguish independent effective factors of resellers, and in the second stage we used DEA for measuring efficiency for both constant and variable return to scales status. Further DEA is used to examine the utilization of environmental factors on efficiency. Results of this paper indicated an average managerial efficiency of 83% in the whole sales representatives' dairy products. In addition, technical and scale efficiency were counted 96% and 80% respectively. 38% of sales representative have the technical efficiency of 100% and 72% of the sales representative in terms of managerial efficiency are quite efficient. High levels of relative efficiency indicate a good condition for sales representative efficiency.

Keywords : data envelopment analysis (DEA), relative efficiency, sales representatives' dairy products, variance inflation factor (VIF)

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