

## عنوان مقاله:

Developing a Two-Stage Network Data Envelopment Analysis Model with Desirable and Undesirable Outputs (Case Study of Butter Manufacturing Industry)

## محل انتشار:

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## خلاصه مقاله:

Determining and measuring efficiency is an important strategy in decision making. Due to the lack of transparency in the efficiency of production stages in Butter production units, the purpose of this study is to design a data envelopment analysis model to evaluate the efficiency of production stages of these units. The contribution of this research is to develop a model for evaluating the efficiency of a two-stage production system with both desirable and undesirable output using the network model of Khalili and Shahmir (۲۰۱۵). The developed two-stage model has been conducted using accurate and certain data of twenty Butter manufacturing factories in ۱۳۹۹, which can evaluate efficiency separately and in an integrated manner. At the end of the first stage, there are two types of desired output. There is a desired output of breakfast cream that does not enter the second stage of production and it is supplied to market for sale, and another desirable output is the pasteurized cream that is transferred to the second stage of production. At the end of the second stage, a desirable output, which is the packaged butter and an undesirable output, which is butter dough are obtained. The efficiency of all twenty units was evaluated and compared. Depending on the efficiency of the whole process, there was only one efficient unit. According to the efficiency of the first stage, there was only one efficient unit out of twenty units, and according to the second stage, there are two efficient units. The conclusion is that this industry has a high inefficiency in the factories located in provinces of Tehran and Alborz on their production process. Thus, it is necessary for the managers of this industry to increase efficiency of their production process.

## کلمات کلیدی:

Efficiency, two-stage production network, Data Envelopment Analysis, Undesirable Output, desirable output

## لینک ثابت مقاله در پایگاه سیویلیکا:

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