



**SELECTING THE MOST SUITABLE FACILITY LOCATION  
BY USING GREY MOORA**

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**ABSTRACT**

Selecting the most suitable facility location is one of the crucial subject for the companies. It is not only the decision of selecting the right facility location, but also the affecting the company's costs in the later stages. Since, almost all the costs in a company are directly or indirectly related with or affected by the facility location. If a company starts its lifecycle with a wrong facility location decision, it can be also kind of the decision of its stillbirth. Starting the lifecycle with an inappropriate facility location, leads to increase company's daily expenses and costs related with the location. Thus, increasing costs day by day are also the decreases of profits day by day, and the increased losses can cause bankruptcy or moving facility location to another place, which is almost impossible for most of the companies. Based on these facts, the aim of this study is to propose a multi-criteria decision model to select the most suitable facility location according to the needs and desires of the companies. For this aim, grey MOORA (Multi-Objective Optimization on the basis of Ratio Analysis) is chosen and adapted to facility location selection problems with multiple decision makers by using grey systems. Combining the linguistic and subjective decisions of the decision makers by using grey systems help us to obtain more consistent and objective results. Then, these combined decisions are analyzed by using the proposed grey MOORA approach to find and select the most suitable facility location for the companies.

**Keywords:** Facility location selection, multi criteria decision making, MOORA, grey system.

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