

## عنوان مقاله:

A Bi-objective Mathematical Model for Designing the Closed-loop Supply Chain Network with Disruption in Production Centers

## محل انتشار:

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## خلاصه مقاله:

In recent years, reverse logistics has received more attention by researchers due to governmental regulations, environmental issues and social responsibilities. This paper deals with the design of a multi-product closed-loop supply chain network, in which some production centers experience minor and general disruptions. The proposed network has three levels in the forward direction (i.e., suppliers, plants and distributors) and three levels in the reverse direction (i.e., collection centers, redistribution and disposal). Initially, plants prepare their needed raw materials from the suppliers; after production in plants, the final products are delivered to customers through distribution centers, percentage of these products are collected from customers by collecting centers. In the collection centers, the percentage of products is returned to manufacturing factories for recycling, percentage of them is sent to redistribution centers for sale to secondary customers, and the percentage that does not possess any capability of the cited items will be sent to disposal centers. The mathematical model presented in this study is a bi-objective mixed-integer nonlinear model while maximizing the profit, the delivery time to customers will be minimized. For validation of the model, a numerical example is provided by Pareto curve, in which the profit is versus the time

## کلمات کلیدی:

Bi-objective model, Closed-loop supply chain network, Facility disruptions

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/350772>

