

## عنوان مقاله:

A bi-level Mathematical Programming for Cell Formation Problem Considering Workers' Interest

## محل انتشار:

فصلنامه بین المللی مهندسی صنایع و تحقیقات تولید، دوره 28، شماره 3 (سال: 1396)

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## خلاصه مقاله:

Nowadays, the necessity of manufacturer's response to their customers' demands and their spheres of actions has extended widely. Staff creativity is an important factor in product evolution, and their interest in collaborating with each other in the working environment can contribute to the growth and maturity of this component. In this research, two important aspects of cellular manufacturing are taken into consideration: Cell formation and workforce planning. Cell formation is a strategic decision, and workforce planning is a tactical decision. Practically, these two sectors cannot be planned simultaneously, and decision making in this regard is decentralized. For this reason, a bi-level mathematical model is proposed. The first level aims to minimize the number of voids and exceptional elements. The second level tends to promote the sense of interest between the workforces for working together, which will result in synergy and growth of the organization. To solve the proposed bi-level model, it was first changed to a mathematical model with one level using KKT method and then solved by LINGO software. To verify the proposed model, a real case study was studied, and the results were presented. This bi-level method makes it possible to find the balance point of the two objectives.

## کلمات کلیدی:

Cellular Manufacturing, Bi-Level Programming, KKT, Workers' Interest

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/794473>

