عنوان مقاله:

Optimization of manpower allocation by considering customer relationship management criteria and uncertainty conditions in car dealerships

محل انتشار:

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خلاصه مقاله:

Purpose A mathematical mixed integer model was used in this research in orderto optimize manpower allocation in car industry. The objective function ofproposed model subjected to minimization of the maximum waiting time forcustomers in service queue and limitations included manpower allocation andtime calculation for each service in each center.Methodology: Therefore, mathematical optimization methods were employedin this research. To solve the problem at small dimensions, BARON solver wasused through GAMS software. Metaheuristic algorithms were used to solve thelarge dimensions of problem due to NP-hard nature of allocation problem.However, these algorithms have been designed based on the natural elements;hence, a stochastic procedure is applied to generate initial responses and toimprove the process to obtained the final response. Therefore, propercomparisons should be done to make sure of accurate performance of suchprocedure. To this end, three metaheuristic algorithms of Genetic, HarmonySearch and Gray Wolf were used to solve the final problem.Findings: According to the obtained computational results, gray wolf algorithmhad the highest performance efficiency compared to other algorithms so it ismore practical in solving the real numerical samples.Originality/Value: The objective function of proposed model subjected tominimization of the maximum waiting time for customers in service queue andlimitations included manpower allocation and time calculation for each servicein each center. We used three metaheuristic algorithms, .Genetic, HarmonySearch and Gray Wolf, to solve the final problem

کلمات کلیدی:

Customer Relationship Management, Mathematical Optimization, Metaheuristic Algorithms, Car Industry