World Academy of Science, Engineering and Technology
International Journal of Industrial and Systems Engineering
Vol:12, No:01, 2018

Optimizing and Evaluating Performance Quality Control of the Production Process of Disposable Essentials Using Approach Vague Goal Programming

Authors : Hadi Gholizadeh, Ali Tajdin

Abstract : To have effective production planning, it is necessary to control the quality of processes. This paper aims at improving the performance of the disposable essentials process using statistical quality control and goal programming in a vague environment. That is expressed uncertainty because there is always a measurement error in the real world. Therefore, in this study, the conditions are examined in a vague environment that is a distance-based environment. The disposable essentials process in Kach Company was studied. Statistical control tools were used to characterize the existing process for four factor responses including the average of disposable glasses’ weights, heights, crater diameters, and volumes. Goal programming was then utilized to find the combination of optimal factors setting in a vague environment which is measured to apply uncertainty of the initial information when some of the parameters of the models are vague; also, the fuzzy regression model is used to predict the responses of the four described factors. Optimization results show that the process capability index values for disposable glasses’ average of weights, heights, crater diameters and volumes were improved. Such increasing the quality of the products and reducing the waste, which will reduce the cost of the finished product, and ultimately will bring customer satisfaction, and this satisfaction, will mean increased sales.

Keywords : goal programming, quality control, vague environment, disposable glasses' optimization, fuzzy regression
Conference Title : ICIEDABN 2018 : International Conference on Industrial Engineering, Decision Analysis and Bayesian Networks
Conference Location : Sydney, Australia
Conference Dates : January 29-30, 2018