Abstract

The success of an industry depends on its product’s quality, cost and delivery time. So, now a days all manufacturers are trying to implement new manufacturing methods for their production process. In this paper, an attempt has been made to find the suitability of new assembly method known as Lean Kitting assembly for a leading two wheeler manufacturer in India. Lean Kitting means supplying assembly station with kit of components. Even though lot of Multi Criteria Decision Making (MCDM) models like AHP, ANP and PVA are available, a Fuzzy Based Simulation (FBS) model is necessary to assure the suitability by considering important factors and simulate the factors with data given by the experts in those fields. This paper mainly focused on the modeling of a ‘Fuzzy Based Simulation’ for finding the suitability of the Lean Kitting system by considering the following important factors: Work In Process inventory, Floor space required, operator walking distance.

Reference

flexible manufacturing system: a real case application. CIM System, 9, 101-110.
leagile supply chain: An ANP- based approach. European Journal of Operational Research,
173, 221-225.
- Farnaz Akhavi, Caroline Hayes, 2003, A comparison of two multi-criteria decision making
Techniques. IEEE.
- G.Askin , B.Goldberg, 2003, Design and Analysis of Lean Production Systems, John
- A. Abdulmaleh, Jayant Rajagopal, 2006, Analyzing the benefits of lean Manufacturing
and value stream mapping in a simulation : A process sector case study .Int.Jr. Production
Economics.
- Banar M, Kose B.M. and Ozkan A. 2006, Choosing a municipal landfill site by Analytical
trade-offs in supplier selection. International journal of Physical Distribution & Logistics
Management, 30, 96-111.
of Production Economics, 100, 285-299.
- Chopra S. and Meindle P. 2001, Supply Chain Management Strategy, Planning and
from a total cost of ownership perspective. European Journal Of Operational Research, 125,
34-58.
- Dickson G.W. 1996, An analysis of vendor selection systems and decisions. Journal of
Purchasing, 2, 5-17.
analysis for supplier evaluation under incomplete information. Expert Systems with
Applications, 35, 1698-1710.
- Tsiporkova.E. and Veselka Boeva.V. 2006, Multi-step ranking of alternatives in a
multi-criteria and multi-expert decision making environment. International Journal of Information
Sciences, 176, 2673-2697.
Mathematical and Computer Modelling, 45, 801-813.
MCDM techniques with independent and interdependent relationships. International Journal of
Information Sciences, 178, 623-642.
Suitability Assessment of Lean Kitting Assembly through Fuzzy Based Simulation Model


**Index Terms**

Computer Science Manufacturing Systems

**Key words**

Lean Kitting assembly Fuzzy
Suitability Assessment of Lean Kitting Assembly through Fuzzy Based Simulation Model

Based Simulation (FBS)

- work in process inventory
- floor space required
- operator walking distance