

Optimum speed of conveyor in Mechanical Assembly Line of RIO Vehicle in SAIPA Corporation

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Abstract

The conveyor speed to carry vehicle bodies into assembly lines to complete the assembly process is very important for managing and increasing the daily production and productivity. In this paper, using discrete simulation technique and a simulation methodology, which is designed by simulation technical committee of Michigan University, we modeled and simulated the mechanical assembly line of RIO vehicle in SAIPA Corporation to find the optimum speed of conveyor, such that the daily production and total productivity are increased as reasonable and feasible. The speed of conveyor in mechanical assembly line of RIO vehicle is 0.9 m/s. Also, the daily output is in arrival [53, 69]. After various running of simulated system of mechanical assembly line of RIO, we found the optimum status of conveyor speed such that the outputs and productivity are increased. In this regard, if the conveyor speed in mechanical assembly line of RIO vehicle is increased as much as 0.6 m/s, the daily output of mechanical assembly line will be in arrival [57, 73], where both, the lower and the upper bounds of the assembly line production will increase as much as 4 units or vehicle bodies.

Keywords: Simulation, Discrete Modeling, Continuous Modeling, Combined Modeling, System Logic, Steady State, Model Validity, Simulation Methodology.

Biography:

Abolfazl Gharaei is a Ph.D. candidate in Industrial Engineering at Kharazmi University in Iran. In addition, he is a Ph.D. visiting student at University of Toronto. His research interests concentrate on inventory modeling and optimization that represent broad spectrum of Exact, Heuristic and Meta-heuristic algorithms. In addition, determining optimum Lot-sizing, Replenishment, Batch-sizing, Lot-streaming in supply chains, inventory model, and integrated inventory systems such as EPQ or EOQ models in the form of MINLP, NLP, and MIP models constitute an important part of his research interests. Furthermore, he has published more than 10 ISI papers in his main interest fields and four books in the field of computer application in industrial engineering. Moreover, he is visiting Professor and he has taught in the Department of Industrial Engineering at Payame Noor University since 2010.