A Review of Two-Sided Assembly Line Balancing Problem

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ABSTRACT

Assembly line balancing (ALB) is concerned with assigning tasks within an assembly line to meet the required production rate for optimization purposes. On the other hand, two-sided ALB performs double-sided assembly operation on a single assembly line. In this paper, we have focused the survey on two-sided assembly line balancing (2S-ALB) research problems. The numerous factors mentioned in 2S-ALB literature were actually based on problem resolutions, and this paper will quote any preferred literature considering the frequent citation. In particular, this review explores in detail the ALB problems, optimization methods, objective functions, and specific constraints used in solving 2S-ALB problems. Among the purposes of ALB problems is that it traditionally focuses on simple ALB with various engaging approaches. General ALB comes second because of its complexity and nondeterministic polynomial (NP)-hard-classified problems. However, due to the current manufacturing issues, GALB problems, such as 2S-ALB, are forced to be examined and this comprehensive literature will specify anything necessary for the optimization purposes. Finally, future research direction has been discovered and put forward as the suggestion.

KEYWORDS: Assembly line balancing; Two-sided; Artificial intelligence

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