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A framework for assessing the use of lean production practices in manufacturing cells

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Abstract

This study introduces a framework for assessing the use of lean production (LP) practices in manufacturing cells (MCs). The development of the framework included four stages: (a) defining LP practices applicable to MC, based on criteria such as the inclusion of practices that workers could observe, interact with and use on a daily basis; (b) defining attributes for each practice, emphasising the dimensions which were typical of their implementation in LP environments; (c) defining a set of evidence and sources of evidence for assessing the existence of each attribute–the sources of evidence included direct observations, analysis of documents, interviews and a feedback meeting to validate the assessment results with company representatives; (d) drawing up a model of the relationships among the LP practices, based on a survey with LP experts. This model supports the identification of improvement opportunities in MC performance based on the analysis of their interfaces. A case study of an MC from an automobile parts supplier is presented to illustrate the application of the framework.

Keywords:

cellular manufacturing | lean production | performance measurement

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