

54<sup>th</sup> CIRP Conference on Manufacturing Systems

## Risk Management in Factory Planning – A Literature Review

Peter Burggräf<sup>a,b</sup>, Tobias Adlon<sup>a</sup>, Steffen Schupp<sup>a\*</sup>, Jan Salzwedel<sup>a</sup>

<sup>a</sup>Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University, Campus-Boulevard 30, 52074 Aachen, Germany

<sup>b</sup>Chair Of International Production Management and Engineering, University of Siegen, Paul-Bonatz-Str. 9-11, 57076 Siegen, Germany

\* Corresponding author. Tel.: +49-151-43175979; fax: +49-241-80-22293. E-mail address: [s.schupp@wzl.rwth-aachen.de](mailto:s.schupp@wzl.rwth-aachen.de)

---

### Abstract

The authors present the results of a systematic literature review on risk management in factory planning. Most importantly, standardized methods are not available yet; hence, approaches from supply chain management, manufacturing as well as project management are frequently applied to factory planning. Furthermore, FMEA, multi-criteria decision-making and fuzzy-logic-based risk assessment are promising techniques for current agile and informationally connected planning procedures. Concluding, the paper discusses how the findings could support the development of a holistic decision-making framework able to handle uncertain information, thus contributing to better risk management decisions and higher achievement levels of project target values in industrial practice.

© 2021 The Authors. Published by Elsevier B.V.

This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

Peer-review under responsibility of the scientific committee of the 54<sup>th</sup> CIRP Conference on Manufacturing System

Keywords: factory planning; factory design; plant planning; risk; risk management; risk assessment; multi-criteria decision-making; fuzzy logic

---