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## **Organizational and technological conditions for the implementation of Lean Management tools in production processes**

### Abstract

The aim of this doctoral dissertation was to identify and systematise the organisational and technological conditions that determine the implementation of Lean Management tools in production processes. This issue remains relevant both in theory and in practice, as the effectiveness of Lean tool implementation depends not only on the methodology itself, but also on the organisational and technological context in which they are used.

The theoretical part reviews the literature on the concept of Lean Management, with particular emphasis on the principles of the Toyota production system, and describes the Lean tools most commonly identified in scientific research and economic practice. Next, the categories of organisational and technological conditions were analysed, distinguishing between organisational, technological and macro-environmental conditions, and indicating their importance for the success of Lean transformation.

The methodological part uses a literature review and a systematic review of the literature according to the PRISMA procedure, covering publications from the Scopus database. The analysis allowed us to identify a set of Lean tools and the key conditions for their implementation. Next, a qualitative data analysis was conducted, assigning thematic codes to each tool and condition. The result of thematic coding was the creation of a Jaccard linkage matrix and a change in the nature of the research from qualitative to quantitative. Finally, the identified connections were validated using the Delphi method.

The result of the dissertation is an original research model presenting the relationships between Lean Management tools and organisational and technological conditions. The results indicate that the effectiveness of Lean implementation depends on the simultaneous consideration of organisational and technological factors, and to a lesser extent on macro-environmental factors. The work makes a theoretical contribution in the form of systematising knowledge about the conditions for Lean implementation and a practical contribution by identifying key determinants of effective process improvement for manufacturing companies.