Lean and the working environment: a review of the literature - DTU Orbit (02/11/2019)

**Purpose** - The effects of lean on employees have been debated ever since the concept was introduced. The purpose of this paper is to review the scientific literature on the effects of lean on the working environment and employee health and well-being. Design/methodology/approach - Relevant databases were searched for studies of lean and the working environment. In total, 11 studies with quantitative effects of lean are included in this review. The methodology and results are analysed to extract information about lean and the effects on working environment. Findings - There is strong evidence for the negative impact of lean on both the working environment and employee health and well-being in cases of manual work with low complexity. However, since examples of positive effects were also found in the literature, it is important to move from a simple cause-and-effect model to a more comprehensive model that understands lean as an open and ambiguous concept, which can have both positive and negative effects depending on the actual lean practice used on the shop floor. Research limitations/implications - The evidence remains limited with regard to the effect of lean on the working environment outside of manufacturing industry. The literature reflects, only to a limited extent, on the significance of implementation strategy and production context. Practical implications - Organizations working with lean should make efforts to avoid an impaired working environment for manual employees. Involvement of employees in lean's practical application is one possible way of developing a healthy working environment. Originality/value - This is the first paper to make use of the existing research evidence to examine the complex and ambiguous relations between lean and the working environment.

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