INSTITUTE OF PSCM

TECHNISCHE UNIVERSITÄT DARMSTADT

Bachelor's Thesis

It's so boring, or isn't it? A study of monotony in production and logistics tasks

Background

Monotony, characterized by tedious repetition and routine, often occurs in our daily lives. For example, long stretches of driving on straight, flat highways with little variation in the landscape can become monotonous for drivers, who may need a break to breathe fresh air and relieve their attention from continuously focusing on the road (Bier et al., 2020). In production and logistics, monotony can similarly arise, especially for repetitive tasks such as assembly, picking orders, or inspecting quality. With an increasing level of process standardization, automation, and the division of labour, tasks become highly predictable, leaving workers with limited cognitive engagement or variation in activity (Fisher, 1987). Monotony may lead to reduced job satisfaction, increased error rates, mental fatigue, and even long-term health issues such as musculoskeletal disorders or stress-related symptoms (Azizi et al., 2013; Cummings et al., 2016). In the era of digitalization, more digital technologies such as augmented reality and RFID scanners, are being integrated into work processes. These digital solutions introduce new forms of human-technology interaction. Given this shift, an important question arises: will these technological advancements reduce monotony in production and logistics, or will they reshape it in new ways?

Objective

The objective of this thesis is to explore the diverse types of monotony encountered across various production and logistics tasks—such as assembly line work, order picking, and quality control—by investigating the underlying factors that contribute to monotony and examining methodologies for measuring it. In addition, the thesis intends to gain insights from the literature and review best practices for designing more engaging, adaptive, and human-centric work systems that balance efficiency with worker well-being. To achieve these goals, a systematic literature review methodology will be used to investigate state-of-the-art scientific works and summarise the results in a structured way. Additionally, a discussion should be formalized to gain insights and derive practical recommendations.

References

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Cummings, M. L., Gao, F., & Thornburg, K. M. (2016). Boredom in the Workplace. Human Factors: The Journal of the Human Factors and Ergonomics Society, 58(2), 279–300. https://doi.org/10.1177/0018720815609503

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