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ENERGY EFFICIENCY IMPROVEMENT FOR MANUFACTURING COMPANIES IN LATVIA

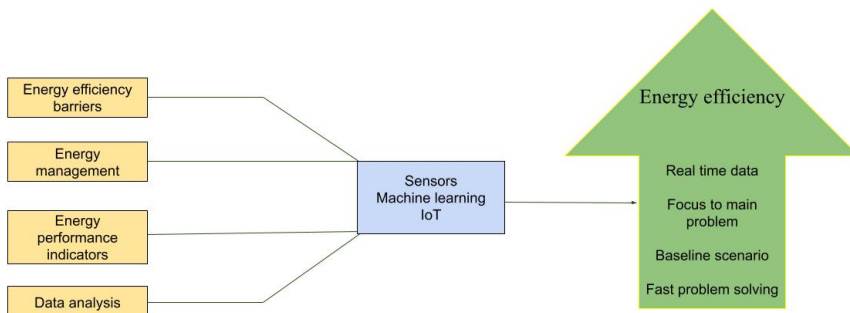
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Abstract – Climate change and environmental issues are becoming more and more popular nowadays, and are causing concerns in everyone’s life and beyond. One of the significant causes of climate change is energy consumption, especially in the manufacturing sector. Even though energy efficiency (EE) topic has been extensively discussed, not all EE aims are met. For the manufacturing sector, the reason is that EE is often not a top priority for the companies. Currently, the companies are also faced with another big challenge – in this digital era of rapidly developing technologies they have to adjust their practices to seize the opportunities provided by digitalization and automatization. Therefore, the aim of this research is to explore how digitization can be combined with EE to promote the resilience and increase performance of manufacturing companies, and how remote data analysis, also by using machine learning tools, can help improve EE. Literature review, content analysis, empirical data analysis and case studies from the real production companies in Latvia are used to achieve the research goals. The results section shows how digital tools and real-time monitoring help in the assessment of the current state of the business, and making decisions on changes to future operations, helping to reduce consumption and the environmental impact of production. Manufacturing companies have the potential to improve EE through digitalisation, but the manufacturing processes are complex, and Latvian companies are only slowly moving towards digitalization. Therefore, there is a strong need to examine empirical cases to gather more perspective and to find a way to implement digitalization and EE improvement across all sectors. Conclusions suggest that manufacturing companies should be encouraged to move towards a more unified energy data collection system, enabling more efficient data analysis and proposals for energy efficiency improvement.

Keywords – Energy efficiency; digitalization; improvement; manufacturing companies



Incorporating digitalization to increase energy efficiency in manufacturing companies.