

Abstract

mgr Ewelina Senczyszyn-Rożek

The objective of the dissertation is to identify key determinants of effective management in Industry 4.0 enterprises within the context of the Fourth Industrial Revolution, taking into account the specificity of modern organizations operating in a digital environment. The research problem concerns the identification of characteristic factors determining management effectiveness in Industry 4.0 enterprises, as well as verification of the extent to which classical approaches to effectiveness assessment are applicable in this context. The research gap stems from insufficient empirical and methodological analyses regarding management effectiveness in fourth-generation enterprises.

The work encompasses a critical review of global and domestic literature, analyzing achievements related to maturity models, Industry 4.0 technologies, systems integration, and leadership in the era of automation, artificial intelligence, and business process digitalization [Schwab 2016, pp. 1–20]. A matrix of management effectiveness criteria identified through literature review supplemented by expert research has been presented, classifying criteria into universal and specific to Industry 4.0 enterprises.

The main hypothesis of the work assumes the possibility of distinguishing a limited set of key determinants of Industry 4.0 enterprise management effectiveness. Supporting hypotheses indicate: (1) the inadequacy of classical approaches to the specificity of Industry 4.0 enterprises, (2) the necessity of applying complex research methods, (3) the significance of differences in defining Industry 4.0 enterprises, and (4) high expert consensus regarding key determinants.

The research methodology has a triangulation character and consists of several phases: (I) conceptualization and literature review (SLR), (II) operationalization of criteria, (III) expert research (surveys, interviews), (IV) multidimensional analysis using the AHP (Analytic Hierarchy Process) method. Current research results indicate that Industry 4.0 enterprise management effectiveness is a derivative of multiple dimensions.

In summary, the work fills the cognitive and methodological gap through systematic compilation and empirical verification of management effectiveness determinants in Industry 4.0 enterprises. It also provides a foundation for further research on organizational functioning under conditions of dynamic technological and social transformation