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MACHINE LEARNING-BASED ASSESSMENT OF NON-SYSTEMIC RISKS IN CORPORATE GOVERNANCE OF STATE-OWNED ENTERPRISES

The article explores the role of machine learning algorithms in the system of assessing non-systemic risks of corporate governance of state-owned enterprises in the context of the war in Ukraine and the digital transformation of the public sector. The feasibility of developing a conceptual model based on high-performance machine learning algorithms is proven, which is associated with the growth of various types of data (structured, semi-structured and unstructured) on the functioning of state-owned enterprises and the inability of classical methods to reliably assess uncertainties. A five-level scheme for applying machine learning methods has been developed, which involves the sequential implementation of the following stages: selection of relevant data sources about state-owned enterprises, processing of accumulated heterogeneous information, formulation of analytical tasks, selection of algorithms and interpretation of the results obtained. Six main areas of application of machine learning algorithms for assessing non-systemic risks of corporate governance are identified: classification of risk level (Random Forest, Gradient Boosting), detection of anomalies and signs of fraud (Isolation Forest, autoencoders), analysis of reputational risk using natural language processing methods, forecasting the dynamics of financial and operational indicators (LSTM/GRU), clustering of state-owned enterprises by risk profile and explanation of model results using SHAP and LIME methods. A comparative analysis of traditional methods for assessing uncertainty and high-performance machine learning algorithms is carried out according to the criteria of scalability, ability to process unstructured data and interpretability of results. The feasibility of combining traditional approaches (expert assessments, Dempster-Shafer theory) with machine learning algorithms for improving the quality of management decisions in the public sector of Ukraine in conditions of war and post-war recovery is proven.

Keywords: corporate governance; state-owned enterprises; non-systemic risks; machine learning; artificial intelligence; risk assessment; Dempster-Shafer theory; digitalization of the public sector.